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ABSTRACT

This collection consists of the technical papers presented at a federally sponsored workshop on financing of mental health services for children and adolescents. Individually, the papers reflect the fragmentation of the field--both the fragmented service delivery system and fragmented research on services and financing. Together, the papers form a critique of the present system and provide the outlines of how to remedy the problems that characterize the present system of care and how to create a coordinated system of care. Papers have the following titles and authors: "Comprehensive Health Care for Children and Adolescents: Implications for Financing Mental Health Services" (Julius B. Richmond); "Suffer the Children: The History of Financing Child Mental Health Services" (Mary Jane England); "Financing Children's Mental Health Services: Analytical Perspectives from Medicare Data for Psychiatric Hospitalization" (Marc P. Freiman); "Mental Health Care for Children and Adolescents in Health Maintenance Organizations" (Maureen Shadle and Jon B. Christianson); "Financing Child and Adolescent Inpatient Mental Health Services through Private Insurance" (Constance Horgan and Thomas McGuire); "An Analysis of Medicaid Coverage Policies Affecting Access to Children's Mental Health Services" (Harriet B. Fox); "National Special Education Programs as a Vehicle for Financing Mental Health Services for Children and Youth" (John A. Butler); "Diagnosis-Related Groups and Child Psychiatry: Determinants of Inpatient Resource Use Based on CHAMPUS Data" (Agnes Rupp); "Economic Aspects of Investments in Preventing Mental Disorders in Children and Adolescents" (Richard G. Frank); "The Impact of Mental Health Treatment on Use of Services by Children" (Barbara Starfield and Kelly Kelleher); "Health Care for Children with Autism: Utilization, Financing and Expenditures" (Arnold Birenbaum and Dorothy Guyot); "Family Economic Contribution to the Care of Children/Adolescents with Mental Health Problems" (Deborah D. Franks); "Assessing National Data Bases Related to Financing Mental Health Services for Children and Adolescents" (Margaret McManus); and "Workshop Summary: Financing Mental Health Care for Children and Adolescents: A Gestaltist View of Fragmented Research and Services" (Leonard Saxe and Theodore Cross). (JDD)

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The Financing of Mental Health Services for Children and Adolescents



The Financing of Mental Health Services for Children and Adolescents

Papers presented at a February 1988 workshop

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Contents

Comprehensive Health Care for Children and Adolescents:	1
Implications for Financing Mental Health Services	
<i>Julius B. Richmond</i>	
Suffer the Children: The History of Financing Child Mental Health Services	13
<i>Mary Jane England</i>	
Financing Children's Mental Health Services: Analytical Perspectives	21
From Medicare Data for Psychiatric Hospitalization	
<i>Marc P. Freiman</i>	
Mental Health Care for Children and Adolescents	29
in Health Maintenance Organizations	
<i>Maureen Shadle and Jon B. Christianson</i>	
Financing Child and Adolescent Inpatient Mental Health Services	45
Through Private Insurance	
<i>Constance Horgan and Thomas McGuire</i>	
An Analysis of Medicaid Coverage Policies Affecting Access	57
to Children's Mental Health Services	
<i>Harriet B. Fox</i>	
National Special Education Programs as a Vehicle for Financing	65
Mental Health Services for Children and Youth	
<i>John A. Butler</i>	
Diagnosis-Related Groups and Child Psychiatry:	77
Determinants of Inpatient Resource Use Based on CHAMPUS Data	
<i>Agnes Rupp</i>	
Economic Aspects of Investments in Preventing Mental Disorders	87
in Children and Adolescents	
<i>Richard G. Frank</i>	

The Impact of Mental Health Treatment on Use of Services by Children.....	101
<i>Barbara Starfield and Kelly Kelleher</i>	
Health Care for Children With Autism:	109
Utilization, Financing and Expenditures	
<i>Arnold Birenbaum and Dorothy Guyot</i>	
Family Economic Contribution to the Care of Children/Adolescents	129
with Mental Health Problems	
<i>Deborah D. Franks</i>	
Assessing National Data Bases Related to Financing Mental Health	139
Services for Children and Adolescents	
<i>Margaret McManus</i>	
Workshop Summary	149
Financing Mental Health Care for Children and Adolescents:	
A Gestaltist View of Fragmented Research and Services	
<i>Leonard Saxe and Theodore Cross</i>	

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Comprehensive Care for Children and Adolescents: Implications for Financing Mental Health Services

Introduction

It is an understatement to say that this workshop on the financing of mental health services is timely. The literature on health care is pervasively laced with papers dealing not with health or mental health issues, but with the financing and organization of services.

This is not the place to discuss the complexities which have developed in the organization and financing of health services. Cost containment efforts have led to chaotic struggles between market and regulatory approaches. A whole new jargon has developed which I will mention for its symbolic significance. We have gone from DHEW to DHHS, from SSA to HCFA, and from PSRO to PRO, and we reimburse through PPSs, using DRGs and HMOs, to which we now add IPAs, HIOs, CMPs, and PPOs. I should add that there is ongoing experimenting with SHMOs.

In programmatic terms, we have had emerging MR programs, including UAFs, DDs, CMHCs, EPSDT, P.L. 94-142, and P.L. 99-457.

If we are to work our way out of our current dilemma in serving children and families, it is appropriate to turn to recent history in order to understand how we got this way. Abraham Lincoln said it: "If we could first know where we are, and whither we are tending, we could then better judge what to do, and how to do it."

Through my personally biased lenses, I see several trends which I believe have contributed. While my remarks today are largely critical, I do want to leave the impression that children and families are in many ways better off today than they were several decades ago (a point to which I shall return later). I do intend to emphasize that, in a society with our degree of affluence, we have a responsibility to do much better for our children.

Some Trends in Health Care

What, then, are some of these trends?

1. The rise in total expenditures for health

In figure 1, the national health expenditures are shown for the years 1960-1987.

In 1960, total health expenditures were 5.3 percent of the gross national product. In 1987, these expenditures were more than 11 percent, about 2 times higher. This amounts to just under \$500 billion or about \$2,000 per person.

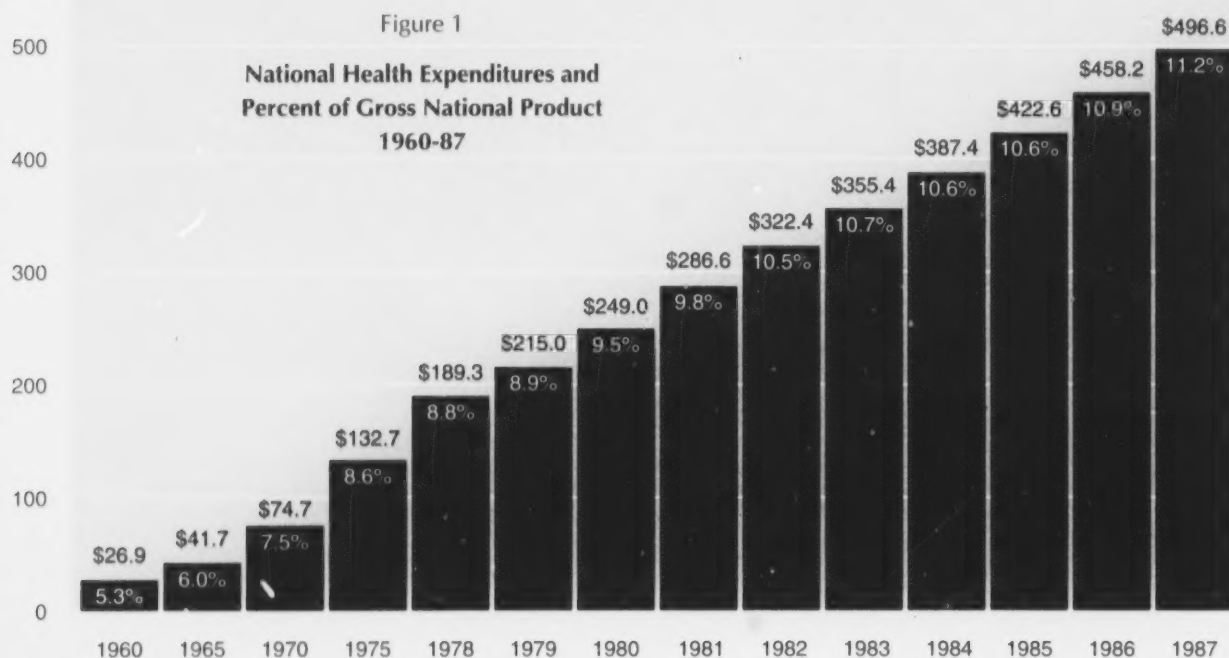
These increases were fueled in part by the social revolution of the 1960s which included the passage of a bumper crop of health legislation. Table 1 shows a list of federal legislation which Congress enacted in 1965, including: Medicare, Medicaid, Regional Medical Programs, Comprehensive Health Planning Assistance, and the Maternity and Infant Care and Children and

Youth Projects legislation. The antipoverty legislation which brought with it Head Start and the Community Health Centers was enacted at the same time.

One might ask, were not these trends heading in the right direction? It is clear, in retrospect, that we were acting on what I have termed a "deficit model." By and large we were expecting that, if we just increased the resources, all would go well. Certainly the professional organizations, the hospital associations, and the academic communities were not proposing that there ought to be reforms in the system. Indeed, in general, they strongly resisted change.

By the time we reached health expenditures equal to 10 percent of the gross national product, people began to ask: "How much is enough?" Even more significantly, the health sector of our economy became a target for entrepreneurs of all kinds. Venture capitalists, industry—especially the pharmaceutical, instrument, and computer segments—real estate interests, and bankers all began to see "gold in them thar hills." Health

Billions
of Dollars



issues are followed by Wall Street analysts, and the financial pages of the daily newspapers now carry the major health news of the day. Small wonder that we are now referred to as an industry!

It is fair to say that the leadership position in health care was taken from the professionals almost by default. The bottom line has become a driving force; when combined with cost containment efforts it is clear that those who manage money, but who do not deliver health services, are in control. The large-scale funding for services through Medicare and Medicaid, along with the behavior of the private third-party payers, have introduced accounting efforts which make more and more difficult the cost shifting which helped care for many of the uninsured. As a consequence, the poor are worse off than they were. As we all know, children from low-income, minority, and inner-city or rural families tend to be especially at risk for emotional and behavioral problems. Just as significantly, however, this process has had the effect of causing the nonprofit health sector to behave much more like the for-profit sector. This is, in no small measure, the reason for a renewed focus on caring for the uninsured. While the activity is largely at the state level at the moment, one wonders how long it will be before we again look to some form of universal financing of access to health services—which in the past we have quaintly called national health insurance.

In addition to the poor being worse off, another consequence associated with the rise in health costs has been the emergence—particularly in the last several years—of a form of cannibalism. That is, each set of advocates pursues funds regardless of the consequences for other services. This is particularly difficult for children's services for which a comprehensive set of services is basic for high quality care.

2. *The growth of fragmentation*

It is understandable that, in a pluralistic society, programs would evolve under a variety of auspices. At the federal level, however, until the social revolution of the 1960s, most children's programs were

concentrated in the U.S. Children's Bureau, which had been established in 1912 as a consequence of the first White House Conference on Children. Most people today could not say whether or not the Children's Bureau still exists (it does).

Just a few changes might be mentioned briefly. The establishment of the National Institute on Child Health and Human Development at the National Institutes of Health in 1962 relieved the Children's Bureau of much of its responsibility in child health research. The transfer of the Maternal and Child Health (MCH) Services Programs to the Public Health Service, as well as the coming of Medicaid, relieved the Children's Bureau of a large block of its service responsibilities. The passage of the Community Mental Health and Mental Retardation Act in 1963 established the locus for these programs in yet another agency of the Public Health Service. In 1965, the Head Start program in its first year attained a budget larger than the Children's Bureau had achieved in 50 years.

The fragmentation has proceeded at all levels of services, both public and private. In my view,

Table 1

Federal Legislation Enacted in 1965

Medicare (Title 18)
 Medicaid (Title 19)
 Regional Medical Programs
 Comprehensive Health Planning Assistance
 Health Professions Education Assistance
 Maternal and Infant Care,
 Children and Youth Projects (Title 5)
 Economic Opportunity Act
 Neighborhood Health Centers
 Head Start

the fragmentation (and cannibalization) has increased to the point of causing health services to become dysfunctional. A few examples of the directions we have gone will make the point for those working at the local level.

We have programs by:

1. **Disease categories.** No disease is without its advocates, as is evident in various campaigns and most apparent in the media. One can understand the reasons why constituencies develop around specific problems. Parenthetically, I would say that advocates for mental health programs have not developed this approach as well as other groups.
2. **Age groups.** We have programs for prenatal care, school-age pregnancy, and, of course, the largest program—Medicare for the elderly.
3. **Income.** Many programs are specifically for low-income populations. The largest, Medicaid—not specifically for children—provides the largest funding for children's services. It expends approximately \$5 billion, in contrast to the MCH budget of approximately \$500 million. Many state and local programs are targeted to low-income families.
4. **Institution setting.** School health programs are an example of services based on where the children are located for significant segments of their lives (Rutter records this as 15,000 hours). Welfare departments provide a variety of health and mental health services under the auspices of school health programs.
5. **Agency auspices.** Because the legislation establishing the Special Supplemental Food Program for Women, Infants and Children places it in the U.S. Department of Agriculture, a separate administrative

arrangement becomes necessary to link it to the health care system—a desirable but complex arrangement. Mental health and mental retardation programs for children have their auspices. Mental health programs for children are generally administered by overall mental health programs for all age groups and often suffer neglect at the hands of those more interested in programs for adults.

6. **Geography.** Because of special needs, programs have developed for the rural areas. The National Health Service Corps and rural health initiatives are such efforts. The Community Health Centers programs are yet another initiative designed to bring health services resources into low-income rural and urban areas.

3. The changing sociology of the American family

Although the sociological trends are well known, they merit mentioning because of their implications for services. They include:

1. The increase in the percentage of single parents. The majority of these families are headed by females.
2. The increase in the percentage of working parents. The Institute of Child Health and Human Development in 1986 projected that, by 1995, four out of five children between the ages of 7 and 18 and two-thirds of all preschool children will have working mothers.
3. The increased visibility of the need for day care and preschool programs. The lack of a policy to foster the development of such resources is becoming increasingly apparent. Proposed federal legislation may alleviate this problem.
4. The increasing percentage of children living in poverty. Figure 2 shows poverty rates among children for the years 1960–1983. Over the past decade, the economic fate of the elderly population has been the reverse of the young (the

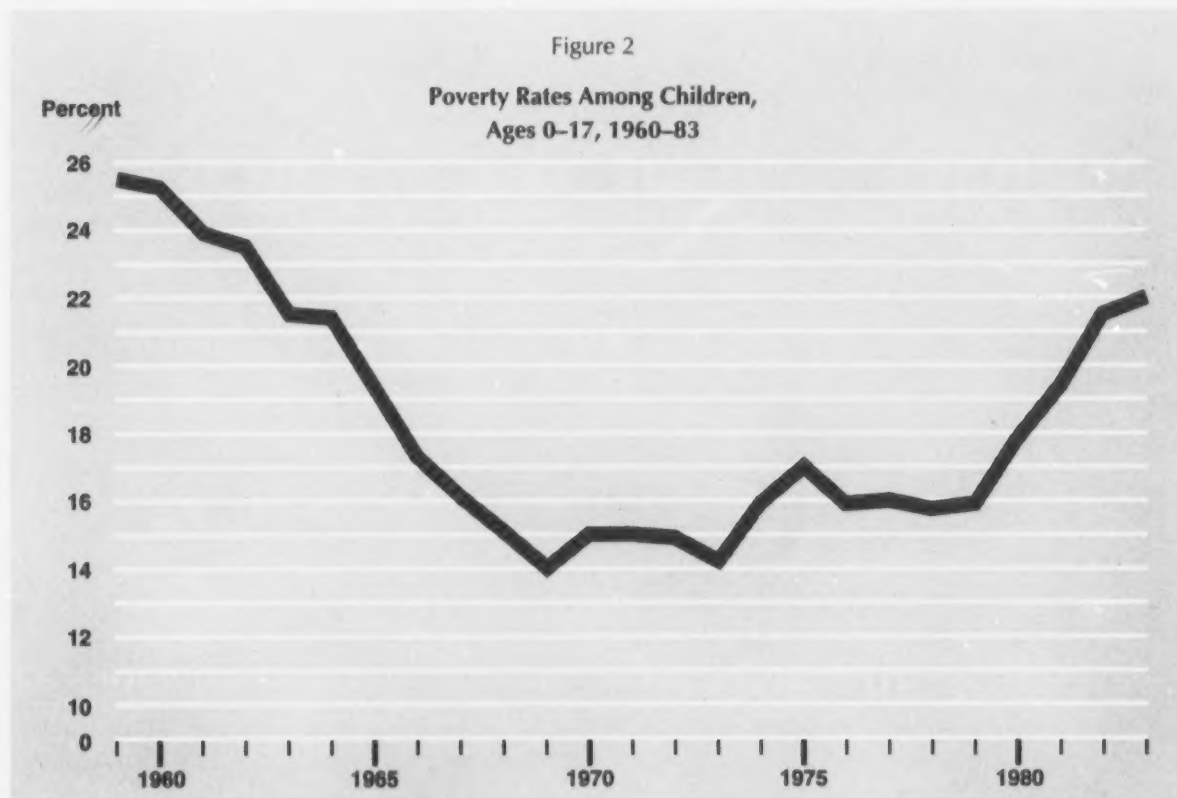
proportion of elderly persons living in poverty has decreased from 25 to 14 percent). In contrast to the elderly, who started at the same poverty rate, children achieved significant gains only to have these eroded. This is even more striking if we include transfer payments. It would be unseemly to suggest that the elderly are not deserving of these hard-won gains. But our society can afford to do as well for our children. Indeed, we cannot afford not to do it!

The presentation on the background of the problems of children and children's services is not meant to be despairing. Indeed, we may now turn to an examination of how this matrix of services may be harnessed to meet the needs of today's children and families more adequately.

The Conceptual Framework

It is difficult to think of meeting the needs of children in a context other than that of growth and development. That is why so many of us find an integrated view of growth and development so congenial. Categorical formulations and programs are limited in their capacity to meet children's health needs.

Many approaches may be considered. Erik Erikson's concept, which uses a developmental/psychoanalytic framework into which biological growth is woven, has guided many of us. Perhaps more based in empirical observations are the pragmatic approaches of Chess, Thomas, and Birch, who built long-term considerations of temperament into their theory. In a diagrammatic way, my late colleague Sterling Garrard and I tried to



present an integrated view of growth and development (see figure 3). The late Dr. Theresa Benedek said it briefly and well: "Growth, neurophysiologic maturation, and psychosexual development are intrinsically interwoven processes."

In an historical context, we have gone through an evolutionary process in generating and applying new knowledge. These periods can be illustrated in the development of pediatrics (see figure 4). In the early part of the century, we went through a descriptive phase in pediatrics, prior to the period of potent new therapies. There also was a surge of interest in normal child development, as is evident in the founding of the Society for Research in Child Development as well as many child development institutes in universities. This was spurred in part by the rise of agriculture and its gains through scientific studies. (Indeed the role of the universities in agricultural research, along with the farm extension agents, may have been our first model for linking research to practice.)

We gradually moved into a period of prevention. More recently, child development research workers became more aware of environmental influences which clinicians had struggled with throughout history. It is to Urie Bronfenbrenner's credit that he conceptualized this as the ecology of childhood. This had the merit of moving some of child development research from the laboratory to the community. The effects of poverty, variations in family composition, child abuse, and injury prevention all became grist for the mill and increased our knowledge base for the formulation of public policy. This brought research workers into the mainstream of policy development on children and families.

We may then turn to what we do with the new knowledge, the new professionals, and the extensive matrix of services in modern America. This brings us to the truly difficult task of sorting out the priorities. Do we concentrate on what we know of prevention, or on the early detection of developmental disorders, or on the treatment of the disorders identified? And, if so, do we concentrate on the high-prevalence, low-severity disorders (such as learning disabilities) or on the

Figure 3

**Conceptual Visual Aid:
Interaction of Multiple Factors**
from Garrard and Richmond, 1974



low-prevalence, high-severity disorders (such as serious emotional disabilities)? Each approach has thoughtful and articulate advocates. Our challenge is to place such advocacies in a context which will benefit individual families and the community the most. We must hope that there are not incompatible objectives.

It is appropriate to comment on another approach which is becoming fashionable, but which must be considered very judiciously. I refer to the efforts to apply cost-benefit or cost-effectiveness analyses as the driving force in shaping policy. These are methods which are in the early stages of their development. While I do not disparage them, I will emphasize that we should never let such considerations override judgments based on our human values. We should recall the definition of a cynic as one who knows the cost of everything and the value of nothing.

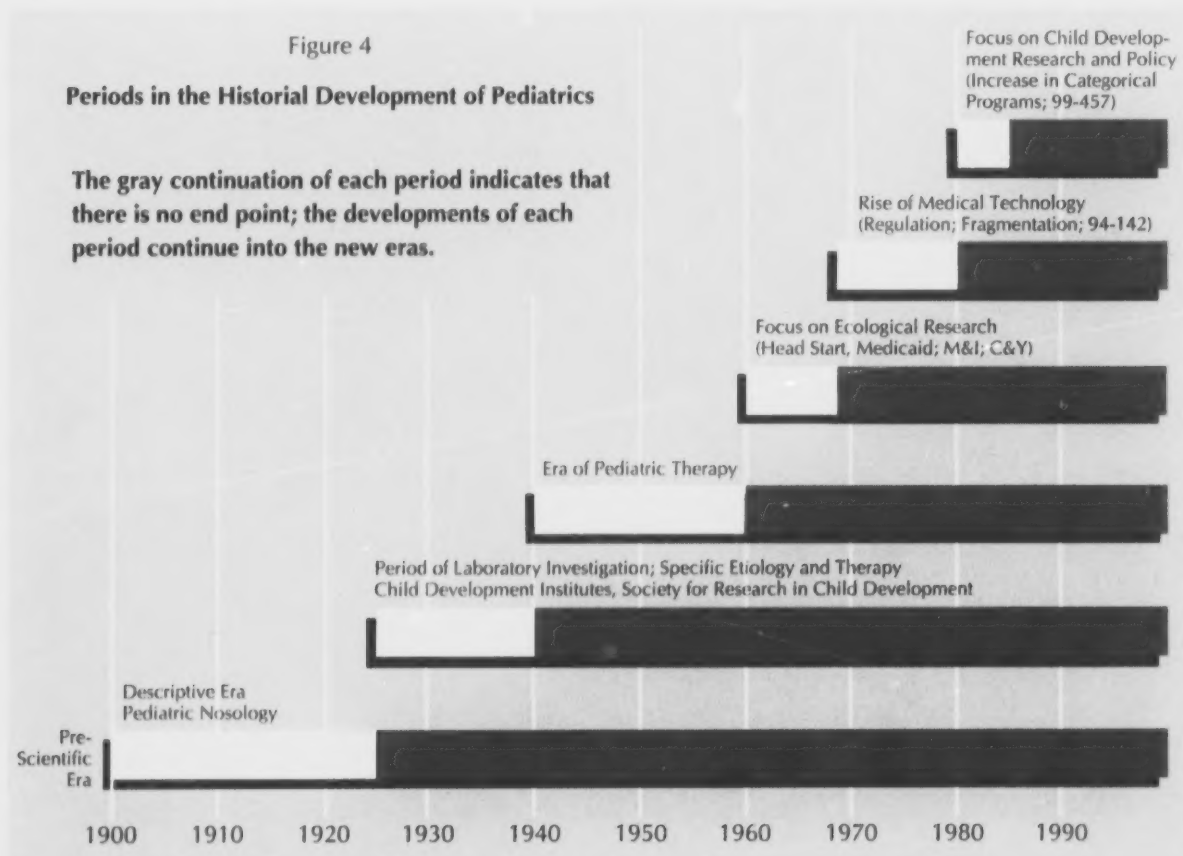
A Strategy

Although it is tempting to select one approach on which to focus our financial and personnel resources, there is no method that will be a good fit for all communities. If we are to provide fully for all children and families, however, a comprehensive strategy must be developed. For too long we have based our advocacy on a deficit model. While I do not mean to suggest that our resources are adequate, too often our existing patterns of services do not provide for those in greatest need, or the existing incentives may be perverse (e.g., the incentives for funding inpatient psychiatric services while comprehensive services in organized settings often go unfunded).

What this means, of course, is that in a country as pluralistic as we are, a number of approaches will need to be utilized depending on the needs and resources of the specific community. There are some generic issues, however, which can serve as guidelines for each community in assessing the adequacy of its services for children. We must have a service system that provides continuity of care and that is comprehensive. These components form the basis for preventive as well as other services for the child and the family. It is helpful to think of these services in relation to the following age periods:

1. *The opportunity to be born healthy and to have continuity of care throughout childhood*

Since I am a pediatrician, it is understandable that I would start at the beginning. Primary health care



services are basic to a healthy start. Yet, for many families in the high-risk category, the services are either unavailable or unutilized. If they are present, they are often discontinuous.

Prenatal care, perinatal care including regionalized neonatal intensive care, and infant health services should lead to continuing pediatric services throughout childhood. Yet, the entire preschool period is one characterized by neglect and discontinuity for most low-income groups. The funding for health services, largely based on a fee-for-service model, has worked to the disadvantage of continuing services under the public health model with its array of public health nursing and social services designed to maintain continuity. The emphasis of third-party payers (public and private) on a fee-for-service arrangement has done much to erode the public health services that are so essential for continuing comprehensive and preventive services for the population most in need. It is a small wonder that the 1980 report of the Select Panel for the Promotion of Child Health focused on the need for developing funding patterns for care rendered in what it referred to as "organized settings."

The role of primary care is essential in the appropriate development and use of various preschool services. Primary care should serve somewhat of a gatekeeper function based on the diagnostic and planning skills of well-trained health professionals. Developmental deviations and clinical problems may be detected early. Early detection may lead to more effective management, as well as to the development of appropriate community resources such as day care and specialized preschool programs to meet special needs. The recent legislation (P.L. 99-457) is designed to deal with this problem. As you all know, this new act creates a new discretionary program, for which \$50 million was appropriated for 1987, to assist states to plan, develop, and implement a comprehensive, coordinated, interdisciplinary program of early intervention services for handicapped infants and toddlers. This is an important step in developing services and interventions at an early age.

Studies of the practices of primary care physicians, such as those of Starfield, indicate that as

many as 25-30 percent of the visits in pediatric settings are for issues of psychosocial development. The arrival of children at school without earlier appropriate diagnostic and therapeutic intervention is one of the unfortunate aspects of our neglect. The programs stimulated by the Education for All Handicapped Children Act (P.L. 94-142) often are asked to overcome our earlier failures.

It is appropriate to observe that we have learned much in the past two decades about comprehensive programs for disadvantaged preschool children. The long-term effects of programs like Head Start are helping us to better understand how to build more effective programs. Our problem is that we do not act on the knowledge we have; only one out of five children in need is served by the program, resulting in tremendous loss of human potential. Some school systems, such as those of New York City and State, are proposing to change the age of school entry to four years in order to provide programs like Head Start more broadly.

2. *The opportunity for schooling and learning*

Unfortunately, too many children reach school age without having had the benefit of diagnostic and continuing comprehensive services because of our service system failures in the early years. Thus, school programs are often in the position of having to provide "catch-up" services. The potential for doing this was greatly enhanced by the passage of P.L. 94-142.

The Education for All Handicapped Children Act (P.L. 94-142) is revolutionary in several respects. It marks society's maturation to the point of having respect for all families with handicapped children; it provides universal entitlement; it mandates that resources be provided; it recognizes that the child's work is play and learning—the opportunity to develop what Erikson calls a sense of industry; and it institutionalizes a unique arrangement—the individual educational plan—which brings parents into the process of evaluation and planning with the professionals.

In an effort to evaluate the impact of the legislation, Butler, Palfrey, and Singer—with funding

from the Robert Wood Johnson and Commonwealth foundations—have discovered many positive developments which have taken place. Their study also suggests, however, that emotionally disturbed (ED) children are among the special education students most at risk for poor outcomes. In discussing adequacy of services for emotionally disturbed children as required by P.L. 94-142, Friedman and Duchnowski point out that, despite the requirement of an individualized education program (IEP) for all students, there is little evidence that individualized education programs and curricula have been developed to meet these needs. In addition, there is still a lack of parent involvement in the educational planning for their children, and specialized interventions to address these problems are inconsistent at best.

Even though schools are responsible for providing related services to assist a child to benefit from special education, the confusion around the concept of related services and who has the responsibility for providing them continues to be a major issue. As a consequence, the provision of such services is inadequate, particularly for the emotionally disturbed. For low-income families, the outcomes are even more troublesome. Health insurance for health services is inadequate, and the hoped for integration of health services into the program has not been fulfilled, since physician involvement in IEPs is virtually nonexistent (about 5 percent at best).

The role of schools in providing services for ED children is unclear. School authorities generally seem to regard programs for ED students to be among the least well-developed and least effective special education efforts. In addition, schools are often confused and hesitant to label a child emotionally disturbed both because of the stigma attached and because of the obligation the school system then has to provide expenditures for these services.

Certainly, the schools cannot be expected to carry the burden of providing all health and mental health services. Mental health services, in particular, are very unevenly distributed. There has been serious erosion of community mental health

services for children, and these services were inadequate even before P.L. 94-142. The perverse financing incentives of recent years often favor inpatient hospitalization over other forms of care because it is more readily reimbursable. This has been accompanied by a decline in the availability and quality of publicly administered programs. The states, which often played an important role in maintaining mental health resources, have often permitted the infrastructure to erode, although there is some evidence of renewed efforts to redevelop programs.

3. The opportunity to develop maturity through mastering the developmental tasks of adolescence

During adolescence, at a time when integration of services is much needed, the fragmentation of services in recent years is seen more clearly. By the time children with emotional problems reach adolescence, they are viewed as youngsters with intractable problems and often absorb a sizeable proportion of public and private resources. Thus, we observe primary care services, school-age pregnancy services, family planning programs, sexually transmitted disease clinics, children's courts, and drug abuse and mental health programs providing a patchwork array of services.

While the emerging school-based programs for high-risk adolescent populations may appear to offer the greatest promise for well-integrated services, they cannot serve the significant number of school dropouts who are in need. Programs for adolescents need to employ new means of coordination, and to involve a wider range of public and private agencies. Thus, community-based services are needed for these young people.

The many problems of risk-taking behavior in this age group demonstrate the need for more effective preventive programs. For high-risk groups, the lack of continuity in preventive and therapeutic services is particularly costly.

Children's Mental Health Services

It is clear that children have traditionally been one of the neglected groups for mental health services. It is not that the problem has been ignored; rather that a great deal of time and energy has been given to "rediscovering," over and over, what we already seem to know. This pattern is quite apparent when reviewing some of the reports related to mental health services for children during the past two decades (see table 2).

The Community Mental Health Act was passed in 1963, excluding children; in 1970, the Part F Amendment to the Community Mental Health Act was passed to remedy the section that excluded children. Within a few years, the pendulum swung in the other direction again when, in 1981, special services for children were eliminated in the block grant funding to states. An attempt was made to correct this action shortly afterwards by requiring that 10 percent of the block grants be tagged for the seriously emotionally disturbed (SED). Before it had time to make much of an impact, however, the 10 percent requirement was dropped in 1985.

For the sake of completeness, I want to mention some landmark reports which, if acted upon more fully, would have gone a long way toward providing appropriate services. The Joint Commission on the Mental Health of Children of 1969, among other excellent recommendations, proposed the development of a system of child advocacy at the federal, state, and local levels. It gave rise to the Comprehensive Child Development Act of 1971 which was vetoed by President Nixon.

The President's Commission on Mental Health of 1978 made a set of comprehensive recommendations and resulted in the 1980 Mental Health Systems Act which was repealed in 1981. The Report of the Select Panel for the Promotion of Child Health of 1981 contained comprehensive recommendations advocating better coordination between mental health agencies and schools. One year later, the Children's Defense Fund issued its report, *Unclaimed Children* (Knitzer 1982), and was

Table 2

Federal Mental Health Legislation Enacted for Children, 1963-1985

Community Mental Health Act (excluded children)	1963
"F" Amendments to CMHA (included children)	1972
Block grant funding (requirement of special services for children eliminated)	1981
10 percent of block grants tagged for SED	1982
Block grant requirement eliminated	1985
Child and Adolescent Service System Program (CASSP)	1985

highly critical of the nation's mental health services for SED children and youth. The most recent report from the congressional Office of Technology Assessment, *Children's Mental Health Problems and Services* (Daugherty et al. 1987), concurs with previous panels' findings that unmet needs are significant.

Over the past few years, we have begun to see some positive trends once again in both legislation and individual states developing new models to provide mental health services for children.

The major federal policy response was the establishment of the Child and Adolescent Service System Program (CASSP). The target population for this program was severely emotionally disturbed children, with major emphasis on interagency coordination. Through CASSP in 1984 and 1985, the National Institute of Mental Health (NIMH) funded 22 states to create a focal point for services to SED children. In addition, the National Institute of Handicapped Research and NIMH collaborated in

1984 and provided joint funding for two research and training centers focused on SED children.

A few states have moved forward with efforts to improve and better organize services for SED children. Although many are too new to have been evaluated, there are a few which have been in operation in one or more community-based mental health systems. These include California, Florida, New Jersey, North Carolina, and Vermont.

Each model is unique in order to accommodate the needs in a particular region, but a number of generic issues have emerged that are worthy of our attention. One significant similarity among all the programs is the intent to discourage hospitalization and residential treatment of the SED. In order for children to remain at home and be treated in the community setting, states have tried to assure comprehensive services for these children by having mental health agencies and educational systems coordinate their interventions. An important component of this collaboration is to set in place a system in which services operate on a continuum. Other common issues among these five models include targeting more services for the SED, which again conforms with the effort of decreasing residential treatment programs, and increasing early intervention programs for the SED. Clarification of boundaries and coordination and collaboration among all agencies, including health, mental health, social services, education, juvenile justice, and vocational rehabilitation, will help this process. Emotionally disturbed children often get passed back and forth between agencies with nobody accepting responsibility for their care and treatment.

The Seriously Emotionally Disturbed

A word concerning the need to allocate adequate resources for the seriously emotionally disturbed is in order. Although this is a relatively small percentage of children, inadequate

care is distressing, not only to their families, but also to other children and families, the schools, and professionals in various agencies trying to provide services with inadequate resources. Yet, care for this group is not simple. It requires a spectrum of services—inpatient and outpatient—in order to make the match between need and service, which is never static. Advocates for children must concentrate on services for this group. Our knowledge is better today and we should be in a position to be more responsive.

Councils on Children's Services

It seems apparent that we must restore the balance of resources in our communities to meet the needs of children.

The pluralism which has developed in delivering services suggests the need for some efforts at a rational allocation of resources which will restore the balance to meeting the needs of children rather than enhancing the status or power of individual groups and agencies. In our efforts to pursue the goals of our professions or agencies we may lose sight of the primary goal—improving the health, education, and welfare of children and their families.

We see some evidences for such developments. Healthy Children's programs have developed which focus on reassessing local efforts for children. Statewide reviews are emerging and governors have been more attentive to child health issues in recent years. Some counties have begun to develop Councils on Children's Services with public funding. In some ways, these developments may be reviving the objectives of the Comprehensive Child Development Bill of 1971 which passed both houses of Congress. Whatever forms these developments take, we must do better in providing appropriate and adequate services for all.

We must monitor the allocation of resources so that children's services are not ending up with

the leftovers! It is important to remember that children have traditionally been one of the neglected groups in mental health services, and there are strong pressures to cut funds for children's services and to allocate a larger "slice of the pie" to the elderly. Presently, Medicaid remains an underutilized resource and one of the keys to adequate reimbursement of community-based services.

A Postscript

We are approaching the turn of the century. It is well to recall that, at the last turn of the century, we achieved major improvements in the lives of children. Those were the years in which the battles for universal public education, for children's courts, for child guidance clinics, for infant health stations, and for the elimination of child labor were fought and won. The first White House Conference on Children was held and the U.S. Children's Bureau was founded. The movers and shakers of that period would not be satisfied with less. Those were vintage years for children.

While much progress has been made—and it is important to acknowledge that many of you here have had a positive influence on this progress, and I commend you for these efforts—there is still much unfinished business. We finally have directed the attention of the decisionmakers in the nation to the fact that we cannot afford the neglect and dysfunction of large numbers of our young people. Governor Mario Cuomo has declared the 1990s as the decade of the child. Our challenge is to do at least as well for our children as the advocates of a century ago. They left us a rich heritage. We must move forward with their creativity, vigor, and resourcefulness into a new century of progress for children.

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Suffer the Children: The History of Financing Child Mental Health Services

From the time of the Pilgrims landing in Plymouth, Americans have been concerned about children—how we raise them and care for them—just as we have been concerned about our family patterns. Indeed, a powerful motivation for many groups to come to our shores was to create a better society than that which they left in Europe. One of the qualities of the desired society was an improvement in the lot of the least fortunate.

Unfortunately, a “we” versus “they” society developed early in America. Starting with the Elizabethan poor laws of 1601 (the basis for the earliest welfare provisions in America), these “least fortunate” dependent persons were identified as hapless adults, the involuntary unemployed, and dependent children, many of whom were mentally ill. These were the “worthy poor” to whom parishes and localities provided assistance, often through almshouses which developed in most sizable communities by the middle of the eighteenth century. These almshouses were designed as improvements on the earlier practices of auctioning off town dependents as indentured servants to the highest bidder and originally were intended to provide long-term maintenance or short-term relief for the needy poor.

The financing of mental health services in the United States represents an evolution which has occurred over 200 years. The responsibility for providing and financing mental health services has been shifting among sectors and between levels of government for a long time. From colonial times until the middle of the nineteenth century, care of the mentally ill was exclusively the responsibility of the individual families of the mentally ill persons.

Public responsibility for the care of the mentally ill emerged when centers of population developed and agencies became associated with mental illness. The rise of the industrial revolution was a great force, which squeezed thousands of families, including children, into patterns of lives that were

useful and profitable to the organizers of capital and technology, but threatening to the independence of those who worked the new machine. Whole families poured from the farms and small towns to the textile mills of New England's growing cities.

As the new European immigrants began to arrive in large numbers from the 1830s through the 1850s, new sources of labor—often child labor—became available for the new industries and businesses. At nearly the same time, a number of important charities were organized to try to correct at least some of the flagrant abuses which women and children were experiencing. Many of these organizations, such as the Society for the Prevention of Pauperism and the Association of Improving the Condition of the Poor, flourished. They recruited volunteers, usually women, to act as friendly visitors whose efforts were directed toward influencing both the character and ambitions of the poor they visited. During the mid-nineteenth century, the state assumed some responsibility for the care of dependent mentally ill patients and established state mental hospitals.

By the end of the nineteenth century in the Jacksonian era, responsibility for the care of the mentally ill shifted to the states as state legislatures established needed facilities in response to the advocacy efforts of Dorothy Dix. The latter part of the nineteenth century saw the formation of orphanages and other programs which often housed mentally ill children.

At the beginning of the twentieth century, children began to gain attention at the highest level, when Theodore Roosevelt held the first White House Conference on Children in 1909. Although proposals for a Children's Bureau had started being developed in 1903, it took the White House Conference's support and attention to help establish the Children's Bureau in 1912. The first appropriation for the Children's Bureau was \$25,640.

In 1914 the Children's Bureau requested an increase to a \$165,000 to cover employment of additional personnel, printing costs, and other expenses. The appropriations committee denied

the request and issued only \$25,000. Provision of health care to children became a much publicized idea with no money to support it—a trend which has continued in America, particularly toward mentally ill children.

In 1909, Clifford Beers spearheaded the mental hygiene movement, which emphasized the need for preventive work with children if mental illness and criminal behavior among adults were to be reduced. The next two decades saw the development and growth of the juvenile courts and the child guidance clinics. In 1909, William Healy, director of the Psychopathic Institute in Chicago, pioneered the movement for greater understanding of children by psychiatric examination. In order to provide better services for delinquents, treatment was suggested for children in need. William Healy and his wife, Augusta Brenner, soon established the Judge Baker Clinic in Boston. Repeat juvenile court offenders were examined for psychiatric as well as physical problems.

In 1921, the Commonwealth Fund inaugurated a program to promote community services for the understanding and guidance of children with behavioral problems. In addition to supporting demonstrations of psychiatric clinics, the program provided funds to familiarize social workers and teachers with the psychiatric approach toward delinquency.

The early 1920s saw the development of the habit clinics—among them, the well-known Douglas A. Thom Clinic in Boston. These clinics provided services for preschool children (ages 2–5 years) who had developed symptoms of mental illness.

The child guidance clinics were founded initially in connection with the juvenile courts and subsequently in connection with hospitals, schools, and community groups where they could better serve children whose behavioral problems required attention but not institutionalization. By 1931, 232 child guidance clinics had been established. Funding of these programs came initially from the Commonwealth Fund and from other private dollars as well as from the local communities the child guidance clinics served.

Research studies were undertaken by many of these clinics in the areas of service delivery and clinical interventions. Some of these original clinics are still in operation today. Cooperation with pediatrics began with the formation of consultation and liaison units in pediatrics wards and in outpatient clinics.

Although there had been concern about women and children working in the mines, fields, and factories for wages that were counted in pennies, it took two decades before a Child Labor Statute was finally enacted.

The Social Security Act was passed in 1935. This included a provision for aid to dependent children and created a number of other programs designed to meet the basic needs of children, such as the Maternal and Child Health Services Program, the Crippled Children's program, and the Child Welfare Services Program.

After World War II, the Federal Government began to assume responsibility for the care of the mentally ill. In 1946, the National Mental Health Act was passed with an appropriation of \$30 million. The National Institute of Mental Health was authorized with appropriation language allowing a sum not to exceed \$7.5 million. Of that sum, \$1 million was designated for training grants and stipends, \$400,000 for research grants and fellowships, and \$3 million for grants-in-aid to states.

The American Academy of Child Psychiatry was established in 1953 to provide a national forum for the profession. The National Institute of Mental Health provided funds for advanced training in child psychiatry.

With the strong leadership of President John F. Kennedy, in 1963, a giant step was taken for the provision of comprehensive mental health services in the United States. A sum of \$4.2 million was made available to the 50 states for development of plans for organizing and providing community mental health services. In 1964, an additional \$4.2 million was appropriated. As the states proceeded with their plans, it became evident that children's psychiatric services were not being incorporated into the overall plans. Analysis of 50 state planning proposals disclosed that 19 of the proposals

did not include services for children as a specialized area, only 3 mentioned public school mental health programs, and only 13 discussed prevention of childhood mental illness as an integral part of general prevention.

President Kennedy, in addition to his leadership in the area of community mental health, had insured the passage of Medicare and then, in 1965 under President Lyndon B. Johnson, the passage of Medicaid, a federally assisted health care insurance program for families covered by Aid to Families with Dependent Children (AFDC) or Social Security Income (SSI). Medicaid is a program that is financed by both the state and Federal Government. Depending on the poverty index of the state, the federal share ranges from 50 percent to 77 percent for reimbursable services, including both acute and long-term care.

Medicaid finances the Early and Periodic Screening, Diagnosis, and Treatment (EPSDT) program, a program of preventive health care including physical, dental, and mental health services. Few states have fully implemented the EPSDT program or the full array of mental health services for children.

During 1966, the Elementary and Secondary Education Act, Title I, was passed. This law offered approximately \$1 billion yearly in grants to public education agencies to meet the special educational needs of disadvantaged children in low-income areas; children in institutions for the handicapped, neglected, delinquent, and mentally ill; children of migratory agricultural workers; and Native American children.

The mid-1960s saw the establishment of the poverty programs. Head Start was established in the Office of Economic Opportunity (OEO) with a grant of \$150 million. Head Start is a program for the economically disadvantaged preschool child. It is based on the philosophy that a child can benefit most from a comprehensive, interdisciplinary attack on his or her problems at the local level, and that the child's entire family, as well as the community, must be involved in solving his or her problems. Under the able leadership of Julius Richmond, Head Start was a big success. Under

President Richard M. Nixon, Head Start was transferred from OEO to the Department of Health, Education and Welfare (DHEW), where he also created the Office of Child Development.

Also in the mid 1960s, Congress established the Joint Commission on the Mental Health of Children. For four years, the commission was funded for \$500,000 per year. This commission presented its report to Congress on June 30, 1969. It described the state of mental health services for children as a national disaster and called on Congress for help in establishing a system of child advocacy to guarantee mental health for children. Not only did the commission strongly urge better treatment for the mentally ill, the handicapped, the retarded, the delinquent, and the emotional disturbed, but it also proposed a broader and more meaningful concept of mental health—one based on the developmental views for prevention—and set mental health as the major goal. The commission established a bill of rights which included the following:

1. The right to be wanted;
2. The right to be born healthy;
3. The right to live in a healthy environment;
4. The right to satisfaction of basic needs;
5. The right to continuous loving care;
6. The right to acquire the intellectual and emotional skills necessary to achieve individual aspirations and to cope effectively in our society; and
7. The right to receive care and treatment through facilities which are appropriate to their needs and which keep them as closely as possible within their normal social setting.

The commission called for a guaranteed minimum income for all Americans, a children's

allowance, food programs, adequate housing, social services, day care, foster care, and adoption—a far reaching challenge for the 1970s. Unfortunately, few of these programs were implemented.

Following the report of the Joint Commission on the Mental Health of Children, a group of advocates in Massachusetts conducted an investigation of the mental health department. They found totally inadequate programs for children. Inpatient services were poorly funded, restraint and seclusion were overutilized, and quality assurance was nonexistent. A litany of problems were identified. The press gave the issue great coverage. The lack of leadership and denial of the problems led to the firing of the commissioner, a highly respected psychiatrist and administrator. Additional funding was made available to the department, and the governor hired a new commissioner with a deep commitment to community programs for children and families.

By 1973, a major scandal involving child mental health services under the Civilian Health and Medical Program of the Uniformed Services (CHAMPUS) erupted. In 1956, Congress had passed a national health program that provided total medical coverage to military dependents. In 1966, it had been amended to include psychiatric treatment. By 1973, the program had grown dramatically. Over 60 percent of the CHAMPUS-funded child psychiatric facilities had never existed prior to 1966. Unfortunately, programs had followed the dollars. At a time when adult mental health in this country was going through major deinstitutionalization, the children of the military were being institutionalized. Children were badly hurt by the CHAMPUS programs, and many dollars were lost. Investigators found children badly neglected, held for long periods of times in seclusion and restraint, and with totally inadequate treatment or educational programs. Subsequent programs in the community have provided more normalizing and better services for these young children.

During the 1970s it became clear that financing for child mental health in this country was coming predominantly from agencies and

programs that were not related to mental health. For example, the Education of all Handicapped Children Act of 1974 (P.L. 94-142) was passed. This was a program designed to assure that all handicapped children receive free and appropriate public education with a full complement of services necessary to assure the effectiveness of the educational program.

The act required an individual education plan for each handicapped child with a statement of each child's performance, annual goals, and short-term instructional objectives, and provision of necessary services to meet these objectives. This was an entitlement program available to all, regardless of income. The Federal Government provides little of the funding; most of the funding

comes from local and state dollars, predominantly from property tax.

This piece of legislation was the impetus to mainstream children who in the past had been served in segregated classrooms. Essentially, P.L. 94-142 is an attempt to reduce the stigma of mental illness and other handicapping conditions and improve normalization. Special education is one component of a more comprehensive support program needed for these multiproblem children and their families. These youth exist in several state systems, including mental health, juvenile justice, child welfare, substance abuse, child abuse and neglect, as well as in the educational system. The failure to provide services has been well documented. States now, at a minimum, need to focus

Benefits for Outpatient Physician Mental Health Care

	All children with private insurance	With mental health benefits		High Maximum			Other Maximum		
				Service benefit or full UCR	Inter-mediate visit benefit	Limited visit benefit	Service benefit or full UCR	Inter-mediate visit benefit	Limited visit benefit
	in thousands	in thousands	%	Percent Distribution					
All children under 18 years	49,463	35,975	72.7	6.2	19.6	25.6	8.7	11.4	28.6
Type of Coverage									
Non-Group	3,443	659	19.1	17.8	14.1	20.4	8.4	16.8	22.6
Group*									
< 25	3,821	2,633	68.9	5.2	10.6	21.8	11.9	12.2	38.3
26-250	9,585	7,630	79.6	4.9	11.5	26.0	8.6	13.0	36.0
251-2500	11,981	9,201	76.8	2.8	23.0	20.0	8.5	15.3	30.4
> 2500	14,371	11,576	80.6	10.5	22.7	32.3	6.7	8.0	19.9

* Excludes about 6 million children for whom group size was unknown.

SOURCE: National Medical Care Expenditure Survey, HIES, 1977.

In Kasper, Judith, "Children at Risk: The Uninsured and the Inadequately Insured," *APHA*, 1986.

on planning and interagency coordination for these children, as well as developing capacity in the delivery system for a full range of services. These include comprehensive clinical diagnostic assessment, crisis intervention, emergency services, intensive treatment, and community support programs for maintaining mentally ill children and adolescents in the community.

By 1977, Medicaid was the single largest mental health program in the country, spending \$4.1 billion on mental health services. Of the \$5 billion spent on 11 million children, \$216 million was spent on inpatient psychiatric care for children.

Under President Ronald R. Reagan, many of the categorical programs became block grants to the states; little of the Alcohol, Drug Abuse, and Mental Health Services Block Grant appeared to be spent on children. The Social Services Block Grant (\$2.7 billion), the old Title XX program, continued to be a source of funding for child mental health programs.

Financing child mental health services through private insurance has been a relatively recent phenomenon. In the late 1940s, private insurance began to provide limited mental health benefits. The focus was on private or nonprofit hospital inpatient treatment as an alternative to the state hospital. By 1977, 87 percent of people with private insurance had mental health coverage. From the beginning, the coverage was discriminatory, with limitations on service and copayment requirements. Coverage has been fairly liberal for inpatient treatment and very limited for ambulatory care, with 20 visits at 50 percent copayment or \$1,500 maximum for outpatient services.

Because of the discriminatory coverage of mental health services, state legislatures have responded by passing legislation mandating certain levels of mental health benefits. The states' role was upheld in the *Metropolitan Life Insurance Company vs. Commonwealth of Massachusetts* when the Supreme Court reaffirmed a state's right to establish minimum content standards for employer-purchased health insurance. A 32-year-old

Massachusetts assistant attorney general, Sally Kelly, argued and won the case insuring minimal benefits for the mentally ill.

Unfortunately, health care follows the dollar. With the current liberal inpatient mental health benefit, hospitals have discovered adolescents. With empty beds due to the Diagnostic Related Groups (DRGs), hospitals are converting to adolescent units across the country. Between 1980 and 1984, there was a 450 percent increase in the number of adolescent psychiatric beds.

Psychiatrists, under economic, family, and community pressures, have admitted adolescents who in the past were appropriately treated in an outpatient setting. The average length of stay is now around 43 days for adolescents, as opposed to 18 days for adults.

Some employees have begun to provide more ambulatory benefits, day hospitals, and home health care and case management programs. Insurance companies are examining the issues and are using utilization review procedures to reduce unnecessary admissions and excessive stays in hospitals.

When the Community Mental Health Center Act was passed by Congress and signed into law in 1963, services to children were not included as one of the mandated services. It was temporarily remedied by the Part F Amendment in 1970. In the early 1970s, the states spent about 18 percent of their resources for children. Expenditures of state mental health agencies have continued to be primarily for state hospitals. Data gathered by the National Association of State Mental Health Program Directors for fiscal year 1983 show that 65 percent of its expenditures were for state hospitals, of which about 10 percent went for children, and about 25 percent of community mental health expenditures went for children. It is estimated that approximately \$1 billion, or 15 percent of the state mental health agency expenditures across the country, went for children.

Findings of groups such as the Joint Commission on the Mental Health of Children (1969) and the President's Commission of Mental Health (1978) documented and described the deficiencies

and needs of the children's mental health system. The publication in 1982 of *Unclaimed Children*, a study conducted by Jane Knitzer on behalf of the Children's Defense Fund, highlighted the deficiencies even more dramatically and helped pave the way for progress. Among other findings, Knitzer reported that only seven states had begun to implement continuity of care for emotionally disturbed children.

Recognition of the 3 million seriously emotionally disturbed children led to the establishment of the Child and Adolescent Service System Program (CASSP) in 1984. This program provides grants to states to create a state level focal point for services to severely emotionally disturbed children to conduct interagency planning and needs assessment activities and, ultimately, to develop more effective service systems.

Since the Pilgrims landed, the needs of children have been inadequately addressed. Children have been used for economic advantage. Because children have little political clout, few leaders address children's needs.

Within the mental health system, children have had a low priority. Except for a few programs, the needs of mentally ill children have been addressed by the social service and educational systems.

Recently, Medicaid and private insurance have assumed a greater role in financing child mental health services. As the health industry moves to managed care systems, children will have improved access to mental health services. Pediatricians have recognized, and many are trained to deal with, the behavioral problems of children. The incentive in the managed care systems is to provide adequate service and avoid long-term problems. Alternatives to hospitalization will be developed and funded as part of the continuity of care for members of the managed care system.

In conclusion, although the history of financing mental health services has been far from glorious, perhaps the future will be brighter. Health care is changing rapidly. There is increasing medicalization of mental illness, supported by research and the recent court decision, *Arkansas Blue Cross*

and Blue Shield vs. John Doe: Reimbursement—Physical vs. Mental Disorder. By the year 2000, we can have an integrated health/mental health system for children with adequate, available services.

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Financing Children's Mental Health Services: Analytical Perspectives from Medicare Data for Psychiatric Hospitalization

Introduction

The Medicare program primarily focuses on the provision of health care for the elderly and the disabled. Consequently, it is not the most promising data set for the analysis of illness in children. Nevertheless, there are several related reasons why at least an exploratory analysis of Medicare data is justified.

First, the Medicare program is the largest single health insurance program in the United States. Its Prospective Payment System (PPS) for hospital care is continually being examined as the basis for payment for hospital care in other programs, both government and private. Consequently, it is worthwhile to examine the classification system used by PPS to determine its appropriateness for other applications, such as hospital care for childhood mental disorders.

Second, given the size and scope of the Medicare program, it can yield data bases containing detailed information on hospital stays that, for their level of detail, are unmatched in their size and geographic coverage of the entire United States. Therefore, it is worthwhile to determine the degree to which the magnitude and geographic dispersion of Medicare data can yield sufficient data to allow analysis of the issues of interest here.

Finally, substantial analysis has been performed on psychiatric hospitalization under Medicare. A portion of this research has been conducted by myself and colleagues at Health Economics Research, Inc., with funding from the National Institute of Mental Health (NIMH) and the Health Care Financing Administration. It is appropriate, therefore, to determine which aspects of this research provide useful perspectives on the analysis of childhood mental health issues, even if the Medicare data themselves can provide little direct empirical evidence.

The remainder of this paper is divided into four sections. The next section discusses the diagnosis-related groups (DRGs) used by Medicare's Prospective Payment System in relation to the treatment of childhood mental health disorders and the degree to which Medicare data can be used to analyze these disorders of children. The following two sections discuss two aspects of our research on psychiatric hospitalization under Medicare that are relevant to the analysis of childhood mental disorders: the use of estimated costs as a measure of resource utilization, and the ability of DRGs to explain this resource utilization. Concluding remarks are presented in the final section. In order to streamline the presentation, the words "children" and "childhood" will be used to refer to both children and adolescents ages 0 to 17 years.

Children Under Medicare and Childhood Mental Disorders

Childhood Mental Disorders and the DRG Classification System

It is appropriate at the outset to review the DRG classification system as it pertains to psychiatric hospital care of children. Over the entire DRG system, which currently stretches from 1 to 475, there are over three dozen DRGs that are expressly designated for children; that is, they include a statement such as "age 0-17" in the description of the DRG (for example, DRG 396, "red blood cell disorders ages 0-17").

In major diagnostic category (MDC) 19, which covers mental diseases and disorders, there is a DRG 431 with the description "childhood mental disorders." It should be noted, however, that no explicit age constraint is contained in this description. DRG 431 is meant to contain certain conditions that are usually, but not exclusively,

associated with children. If an adult is diagnosed with a condition that falls into DRG 431, then this is the DRG into which the hospital stay will be placed.

At the same time, there are many psychiatric conditions that may be applicable to children, but that are not classified into DRG 431 when applied to children. For example, DRG 430 ("psychoses") explicitly includes diagnoses such as "childhood psychosis, not elsewhere classified—active" (ICD-9 code 299.80) along with three other "childhood psychosis" variants (codes 299.81, 299.90, and 299.91). DRG 429 "organic disturbances and mental retardation" includes those diagnoses implied by this description, regardless of patient age. Therefore, children suffering from various degrees of mental retardation or Down syndrome, for example, would be classified in DRG 429.

It therefore appears that the standard brief description for DRG 431, "childhood mental disorders," is somewhat misleading, especially in the context of other nonpsychiatric DRG descriptions that are roughly similar in their allusions to children. Unlike these other DRGs, there is no requirement that DRG 431 contain hospital treatment of only children, and there is no requirement that mental disorders experienced by children be classified as DRG 431. Perhaps a better description for this DRG would be "mental disorders usually associated with children."

How Could a Child Be on Medicare?

All persons 65 years of age and over who are entitled to monthly Social Security cash benefits or payments from the Railroad Retirement System are eligible for Medicare hospital insurance. Persons who have been entitled to disability benefits for at least two years, and those with end-stage renal disease, are also eligible. Children could become eligible for Medicare either because of disability or end-stage renal disease, and if they are dependents of deceased, retired, or disabled social security beneficiaries.

Childhood Mental Disorders Under Medicare

The empirical analysis in this paper utilizes the 1985 Medicare Federal Patient Billing File (PATBILL). This file contains the universe of Medicare hospital discharges during fiscal year 1985, just over 10 million discharge claims in all. An extract was made from this file which contained two components: (1) any discharge for a person under age 18 for a condition classified as psychiatric; and (2) any discharge in DRG 431, regardless of age.

This extract yielded 826 hospital discharges. Unfortunately, only 19 of this total were patients age 17 or below. While this is clearly too small a number for detailed analysis, it should be noted that only 5 of these discharges were in DRG 431. The remaining children were scattered among the other DRGs in MDC 19; in particular, 4 were in DRG 427 ("neuroses except depressive"), and 3 each in DRGs 426 ("depressive neuroses") and 430 ("psychoses"). This meager yield indicates that, even with their great size, Medicare hospital care data bases are not particularly useful for the analysis of mental disorders among children.

The remaining 807 discharges in our extract were therefore Medicare beneficiaries over the age of 17 who were nevertheless classified in DRG 431 for "childhood mental disorders." It is potentially useful for the analysis of the logic and appropriateness of the DRG classification system to analyze these discharges in greater detail.

Forty-eight percent of these patients were 65 or over. The remaining 52 percent, with ages between 18 and 64, were eligible for Medicare by reason of disability. The specific primary diagnoses for these 807 adult discharges in DRG 431 are presented in table 1.

Over a quarter of these discharges (27.8 percent) had primary diagnoses of "other specified disturbances of conduct, not elsewhere classified" (ICD-9-CM code 312.8). An additional 19.1 percent were diagnosed as "symbolic dysfunction, not elsewhere classified" (784.69). Fourteen percent exhibited "unsocial aggression, unspecified" (312.00), 11.3 percent were diagnosed as having

Table 1
Common Diagnoses for Adult Medicare
Hospital Patients in DRG 431

CODE ^a	DESCRIPTION	PERCENTAGES ^b
312.9	Conduct disturbance, NOS ^c	27.8
784.69	Symbolic dysfunction, NEC ^d	19.1
312.00	Unsocial aggression, unspecified	14.0
312.8	Other conduct disturbance	11.3
312.30	Impulse control disorder, NOS ^c	6.1
314.9	Hyperkinetic syndrome, NOS ^c	3.6
312.03	Unsocial aggression, severe	3.2
312.23	Social conduct disorder, severe	2.6
312.4	Mixed disturbance of conduct and emotions	1.5
314.8	Other hyperkinetic syndrome	1.0

a. ICD-9-CM.

b. As percent of discharges in DRG 431 with age greater than 17.

c. Not otherwise specified.

d. Not elsewhere classified.

Source: Medicare 1985 Part A claims data.

"other conduct disturbance" (312.8), and 6.1 percent had "impulse control disorders" (312.30). The remaining diagnoses also relate to conduct disorders, or to hyperkinetic activity. In total, the diagnoses shown in table 1 account for 90 percent of the adult discharges in DRG 431.

These diagnoses may be childhood diagnoses that have been carried forward into adulthood; however, they may also represent poorly diagnosed conditions. The diagnoses of impulse control, conduct disorders, and symbolic dysfunction may have overlooked an underlying disease etiology in elderly patients, such as an organic disturbance, that would place the patient in DRG 429. Hyperkinesis might possibly be more appropriately diagnosed as a manic disorder or agitation syndrome.

In this regard, it should be emphasized that these 807 discharges comprise less than one-half of 1 percent of all Medicare hospital stays for psychiatric illness in 1985. Nevertheless, they do illustrate the potential for adults to be diagnosed with a "childhood" mental disorder.

Measuring Resource Utilization In Hospital Care For Childhood Mental Disorders

The advent of DRG-based payment for Medicare hospital stays under PPS and the variety of cost-containment measures utilized at the state level to restrain hospital costs, both for the Medicaid program and in some cases for all payers, have increased the attention given to the costs of treating various illnesses.

These concerns are especially relevant to the hospital treatment of childhood mental disorders. Specific psychiatric diagnoses may require more resources to provide treatment when the patient is a child. This difference in resources may simply occur in a given facility when children are treated, or it may be associated with the greater likelihood of the treatment of children in more specialized facilities that provide more intensive treatment, regardless of the patient's age.

Although our data base does not allow an analysis of differences in resource utilization for children versus adults in the care of mental disorders, the analyses we have conducted of resource utilization in the hospital treatment of psychiatric illness have provided us with a perspective that may be worthy of discussion in the present context.

Within the narrow focus on hospital resources, three measures have frequently been utilized to analyze care: length of stay, charges, and costs. Length of stay has the advantage of being easy to measure and compare across hospitals. Furthermore, as psychiatric care usually does not involve expensive technology, changes in the use of such

technology as a patient's hospital stay lengthens, or variations among facilities in the use of this technology, are less likely to produce important variations in resource use than would be the case for many other disease categories. While there is some tradeoff in hospital care between length and intensity of treatment, these tradeoffs are probably less prominent in the treatment of psychiatric illness.

Nevertheless, even on a per diem basis, there can be dramatic differences in resource utilization among hospital facilities in the treatment of psychiatric illness. Consequently, length of stay provides only a partial picture of resource utilization.

Hospital charges provide an indication of the total dollar value for patient treatment, and therefore have the potential to capture differences in per diem treatment intensity and resource costs. In addition, such charges are present on the Medicare PATBILL data for hospital discharges. Charges do not reflect only these differences, however; they also reflect the markups utilized by the hospital to convert costs into charges. These markups can vary widely among hospitals; variation in charges does not simply reflect variation in the costs of inputs and the intensity of treatment.

Data on cost-to-charge ratios for short-term general hospitals are revealing (see table 2). Two specific categories especially relevant to psychiatric care—pharmacy and lab—are presented, in addition to a composite for all remaining ancillary departments. The average cost-to-charge ratio for labwork is .63. There is substantial variation in this ratio, however; between the 25th and 75th percentile, the ratio increases from .48 to .72. For pharmacy charges the mean is .48, and this ratio increases over the same range from .36 to .56. Finally, for all other ancillary departments combined the mean ratio is .67, and increases from .54 at the 25th percentile to .74 at the 75th percentile.

This degree of variation in the rate at which hospitals markup charges over costs implies that the use of charges to measure resource utilization may present problems. Unless the variation is totally random, comparisons of charges across types of facilities will confound differences in

Table 2
Cost-To-Charge Ratios For Ancillaries For
Short-Term General Hospitals, 1984

	LAB	PHARMACY	ALL OTHER DEPARTMENTS
Mean	.63	.48	.67
Percentiles:			
10th	.39	.28	.46
25th	.48	.36	.54
Median	.60	.45	.63
75th	.72	.56	.74
90th	.86	.71	.91

Source: FY1984 Medicare Cost Reports.

markups with differences in actual resource utilization.

Hospital costs would therefore appear to be the most appropriate measure of resource utilization for analyzing childhood mental disorders. There are, however, two primary difficulties with using hospital costs. One is that Medicare hospital discharge data, and virtually every other broad-based, discharge-level data set, contain no data on costs. Costs must be estimated utilizing the discharge-level data and other sources.

Prior to PPS, Medicare reimbursed hospitals on the basis of what it determined to be "reasonable costs." Hospitals are required to file Medicare cost reports with their fiscal intermediary, and these reports contain data that allow one to allocate a hospital's costs to categories of service—most importantly, routine care and specific types of ancillaries. These data then can be used to calculate the cost of a day of routine care. They also can be used in conjunction with the total charges listed by the hospital for specific ancillary

services to calculate cost-to-charge ratios. Armed with these routine care per diem costs and ancillary cost-to-charge ratios, one can take claims-level data on length of stay and charges, broken down by ancillary categories, and calculate the cost of a hospital discharge.

In calculating DRG weights for PPS, the Health Care Financing Administration (HCFA) has begun using charges instead of costs. While this choice was no doubt made in part in order to increase the timeliness of the calculations, HCFA has also justified it by analyses indicating a close correspondence between charges and costs. This close correspondence is currently being brought under question, however, and, even if the correlation is fairly good, systematic biases may still be present.

We have utilized this approach of calculating Medicare reasonable costs for psychiatric discharges in our analyses of psychiatric care for NIMH, and believe that it produces the best measure of resource utilization possible for such a large data set covering so many hospitals. Nevertheless, Medicare reasonable costs are not without their shortcomings. These primarily relate to the level of aggregation found in the Medicare cost reports. Only one figure is produced for routine care per diems. Routine care costs, however, may be expected to decline over the length of stay for a patient. This is particularly important for psychiatric treatment, where routine care comprises a larger proportion of the total care costs.

The most extreme instance of such a decline occurs for public psychiatric hospitals. As has been described by Goldman, Taube, Regier et al. (1983), these particular facilities have many functions. In addition to providing acute care, custodial care is also provided by public psychiatric hospitals for cases with long lengths of stay. The Medicare cost report data, however, do not accurately distinguish between the routine costs incurred in the "front wards" and the costs that are expected to be lower in the "back wards" of these facilities. An average derived from combining the costs of these two portions will underestimate resource utilization in the acute care phase of treatment and overestimate it in the less acute phase.

How Well Can We Explain Mental Health Costs For Children?

The Office of Technology Assessment study written by Leonard Saxe and his colleagues (U.S. Congress, Office of Technology Assessment 1986) admonishes that:

The fundamental problem with application of a DRG-based payment system to children's mental health services is that basing payment on a broad category of diagnoses such as "childhood mental disorders" ignores the body of literature on the variety of treatment needs of mentally disturbed children ... A DRG-based prospective payment system may control costs and maintain quality of care for patients who require specific medical or surgical procedures (i.e., non-mental-health care), but it seems inappropriate and potentially harmful to apply such a DRG-based payment system to children's mental health care. (page 138)

Mitchell, Dickey, Liptzin et al. (1987) have analyzed the degree to which psychiatric DRGs can explain the variation in hospital costs for Medicare patients in four states, including New Jersey and North Carolina, in which DRGs only explained 4.4 and 7.5 percent, respectively, of the variation in lengths of stay. Those DRGs explained even lower percentages (3.6 percent for both New Jersey and North Carolina) of the variation in costs.

These results indicate that the psychiatric DRGs that are actually in use for (adult) Medicare beneficiaries are themselves poor predictors of resource utilization. Furthermore, Mitchell, Calore, Cromwell et al. (1984) performed similar analyses of medical and surgical DRGs for Medicare discharges in those same two states. While the surgical DRGs performed much better than the psychiatric DRGs, the medical DRGs as a group performed about as poorly as did the psychiatric ones.

The results for psychiatric DRGs described above are generally similar to the findings of other studies (see Horgan and Jencks, 1987). Given this consensus on the poor predictive ability of psychiatric DRGs, and the similarly poor showing of the medical DRGs, general statements concerning the problems of unmeasured severity and variation in resource use for childhood mental disorders may not in themselves prevent these conditions from being incorporated into a DRG-based reimbursement system. As is discussed in more detail in the following section, what is needed is more detailed empirical research to document these perceptions.

Concluding Remarks

In the DRG classification system currently in use by Medicare, there is a DRG for childhood mental disorders. This is not the only DRG for childhood mental disorders, nor are children the only patients who can be classified into this DRG. The presence of adults in even this DRG, as indicated by the results of our analysis of Medicare hospitalization data, indicates the need for care in interpreting resource utilization data for this DRG. Data bases that incorporate a larger number of children with mental disorders are needed to determine whether, even within this DRG, there are systematic differences in the resources utilized to treat mental disorders in children versus adults.

Based on our experience in analyzing psychiatric hospitalization under Medicare, we recommend that such analyses of differences in resource utilization be conducted with hospital costs as the focus, as opposed to either charges or lengths of stay. While costs are not a perfect measure, they can potentially be produced for almost all hospitals.

Finally, there is a clear and important need for broad empirical studies of the variation in the costs of treating children for mental disorders. The current DRGs for both medical and psychiatric

diagnoses have limited abilities to explain differences in resource utilization among patients. Yet, hospitals are actually paid on the basis of those DRGs when treating Medicare beneficiaries. It is assumed by policymakers that, while there may be substantial financial gains and losses on individual patients, these gains and losses will even out for hospitals under DRG-based payment, particularly after PPS adjustments are made for disproportionate treatment of low-income patients, outliers, indirect medical education expenses, and the like.

There are serious concerns over the financial equity of a DRG-based payment system for childhood mental health disorders, given the range of severity, and of family and community support available. DRG-based reimbursement already is in use, however, both for psychiatric hospitalization of adults and for medical diagnoses where DRGs capture little of the variation in hospital treatment costs. Furthermore, if psychiatric facilities or children's hospitals were brought under PPS, then all DRG weights would be recalculated to incorporate the cost experience of those facilities, and the adjustments for disproportionate share facilities, indirect medical education costs, and other factors would be available to these institutions. There is, therefore, an important need for more empirical analyses that document the cost variation in the hospital treatment of mental health disorders among children

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Mental Health Care for Children and Adolescents in Health Maintenance Organizations

Introduction

The primary purpose of this paper is to identify and discuss potential research issues relating to mental health care for children and adolescents in health maintenance organizations (HMOs). The importance of this topic stems from the continued growth of HMOs in number and enrollment, their increasing availability for Medicaid and other public program beneficiaries, and the relatively small number of studies to date that have focused on the delivery of mental health care to children and adolescents served by HMOs.

The first section briefly discusses the recent expansion of HMOs and the changing nature of the HMO industry. It then summarizes the most recent national data available on the organization and delivery of mental health care in HMOs to all age groups. This section provides a context for the literature review that follows. This review identifies and discusses two types of literature relating to mental health care for children and adolescents in HMOs. The first type consists of case studies and first-hand accounts not necessarily grounded in specific data analyses. These articles are useful in identifying strengths and potential problems related to the delivery of mental health care to children and adolescents in HMOs. The second involves analyses of data on the types of mental health problems among children and adolescents in HMOs and the utilization of services for their treatment. Some studies overlap these categories combining empirical analysis with discussions of treatment approaches.

Based on current developments in the HMO industry and the existing published literature on the delivery of mental health care to children and adolescents in HMOs, the fourth section of the paper suggests research issues that deserve attention, with a brief justification provided for the inclusion of

each issue. Not all issues, however, lend themselves equally well to rigorous research. In a concluding section, problems are identified that are likely to be encountered when engaging in empirical studies of mental health care for children and adolescents in HMOs and, particularly, in studies involving multiple HMOs.

The Evolving Health Maintenance Organization Industry

The HMO industry is now growing at a rapid pace. As of December 31, 1986, there were 626 operational HMOs in the United States with a total enrollment of about 26 million (InterStudy, 1987). The annual growth rate for HMO enrollment since 1981 has averaged approximately 20 percent.¹ The growth in the number of HMOs during the same period has been equally impressive—from 234 to 626 plans (InterStudy 1987).

Several features of this growth merit special attention. First, the composition, or mix, of HMO types is changing rapidly. Among HMOs 3 years or younger, three-fourths are Individual Practice Association (IPA) model plans.² IPAs now constitute 62 percent of all HMOs, as compared to about 37 percent in 1981. They apparently deliver mental health services using different organizational approaches than those employed by other, more frequently studied, HMO models (as summarized in the next section).

A second important aspect of recent HMO growth is the changing mix of for-profit versus not-for-profit firms in the industry (Ermann 1986). Sixty-two percent of all HMOs are now for-profit firms, with three-quarters of the plans under three years of age being for-profit HMOs. Although data on the profit status of HMOs are not available consistently over time, it is clear that the role of the for-profit firms has grown at a steady pace. Not-for-profit HMOs still enroll 60 percent of all HMO

members, but for-profit enrollment grew by 19 percent in 1986 versus 3 percent for not-for-profit plans.

A third element of industry change involves the growth in the importance of national HMO firms (Iglehart 1984). A report issued by InterStudy in February 1986 noted that there "...has been a continuing shift of the HMO industry away from small, independent HMOs toward multistate networks of HMOs linked by common ownership and management" (Holmes et al. 1988). As of December 1986, approximately 50 percent of all HMOs were linked to national firms, and these firms enrolled 60 percent of all HMO members (InterStudy 1987).

Concurrent with these trends in industry structure, Federal Government policy has altered the conditions under which HMOs can enroll Medicaid and Medicare beneficiaries, with the former being of particular interest for the delivery of mental health care to children and adolescents. The 1981 Omnibus Budget Reconciliation Act (OBRA) allowed states greater flexibility to contract with HMOs for their Medicaid programs. It also permitted mandatory enrollment of beneficiaries when waivers of program requirements had been secured from the Health Care Financing Administration (HCFA). As a result, HMO involvement in Medicaid programs has been increasing. For example, the number of HMOs contracting with Medicaid programs rose from 46 in 1983 to 125 in 1986, with beneficiary enrollment almost tripling from 285,000 to 803,000.

Because of their socioeconomic status and lack of familiarity with the delivery system, Medicaid populations, such as Aid to Families with Dependent Children (AFDC) eligibles, often are considered more vulnerable to possible underservice than are members of the private-sector employed groups that have traditionally been enrolled in HMOs. In addition, some policy analysts have expressed skepticism about the abilities of and incentives for HMOs to provide appropriate services to public program beneficiaries with chronic mental health problems (Schlesinger 1986). In particular, it has been suggested that,

whenever possible, HMOs will shift patients to publicly financed and/or operated systems of care (e.g., community mental health centers and state psychiatric hospitals) and that they will develop internal mechanisms to ration care to patients with chronic mental illness. Indeed, psychiatrists have voiced similar concerns with respect to the mental health care offered to members of employed groups enrolled in HMOs. Flinn, McMahon, and Colus (1987) note that "mental health services may be...limited by charging a copayment or additional monthly fee for supplemental mental health benefits and by imposing restrictions on the number of months between hospital admissions or annual or lifetime limits on benefits. Less obvious barriers may include using waiting lists, restricting referrals, and locating the mental health component of the HMO at a distant or inconvenient location." More generally, participants in an NIMH-sponsored conference on mental health care in HMOs "...expressed concern about how little is known about mental health care in HMOs, and the paucity of descriptive and analytic data" (Feldman 1986).

The Organization and Delivery of Mental Health Services Within Health Maintenance Organizations: A Summary of Survey Findings

In part to address this concern, three federal agencies (NIMH, NIDA, and NIAAA) cooperatively funded an analysis of HMO survey data collected by InterStudy. The survey addressed the organization and delivery of mental health care, alcohol treatment, and drug abuse treatment by HMOs during 1985. While no questions were directed specifically at child and adolescent mental health treatment, the survey results summarized below are useful in providing a context for the discussion of research issues that follows.

Organization of Service Delivery

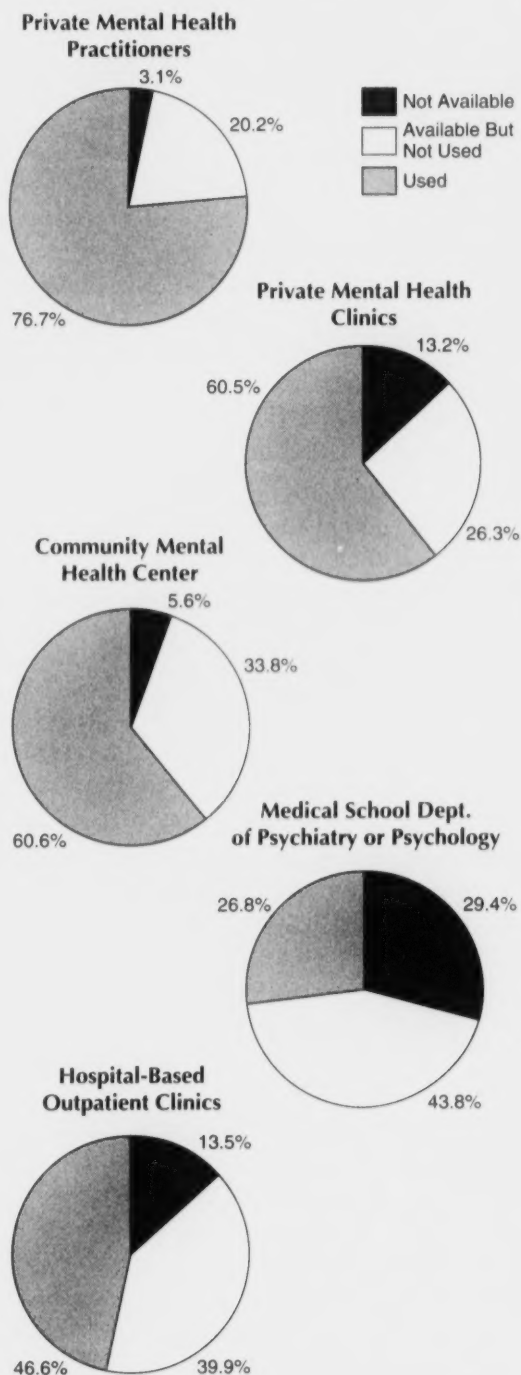
About 70 percent of respondent HMOs indicated that 70 percent or more of their mental health services were delivered internally, where internal provision was defined as services offered by providers participating in the HMO (as opposed to contracting with the HMO under separate management). Forty-seven percent indicated that all or almost all services were delivered internally. Of the HMOs with some degree of internal service provision, 18 percent reported using a separate department staffed with mental health specialists to provide mental health care. Overwhelmingly (88 percent of the respondents), the primary care physician was viewed as a referral agent, directing patients to the appropriate mental health specialist or specialty unit as needed.

Staffing Patterns

While 156 HMOs indicated that they delivered at least some outpatient alcohol, drug abuse, or mental health care internally, only 55 supplied data on staffing ratios (unadjusted for full-time equivalency). Per 10,000 members, these HMOs averaged 3.05 psychiatrists, 1.61 Ph.D. psychologists, and 1.38 psychiatric nurses/social workers. With respect to external providers, sources of mental health care may be classified as not available, available but not used, or used (see figure 1). For outpatient treatment, the majority of HMOs reported use of private mental health practitioners, mental health clinics, and community mental health centers. Hospital-based outpatient clinics and medical school departments of psychiatry or psychology were utilized less frequently. Community or general hospitals were the most commonly noted inpatient sources of mental health care, but about 71 percent of responding HMOs also used private psychiatric hospitals (see figure 2). Fifty-seven percent of HMOs indicated use of partial hospital treatment programs for mental health.

Figure 1

Availability, Use of External ADM Providers for Outpatient Services

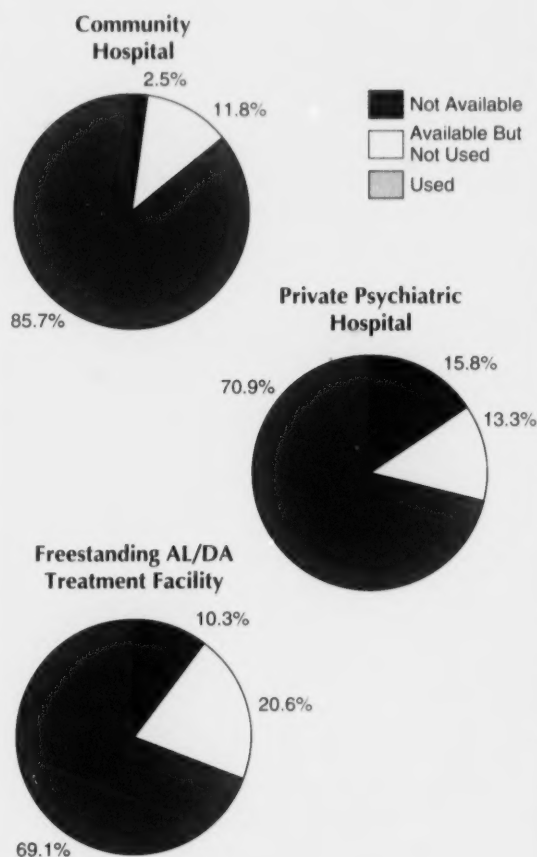


Treatment Modalities and Referral Paths

For HMO members receiving some type of outpatient treatment during the year, 71 percent received individual therapy. Other outpatient treatment modalities were utilized far less frequently; group therapy was used by 13 percent, family therapy by 17 percent, and combined group and individual therapy by 17 percent. For members receiving individual or group therapy, 63

Figure 2

Availability, Use of External ADM Providers for Inpatient/Residential Services



percent were treated in fewer than 10 sessions, with only 11 percent receiving more than 20 sessions. With respect to inpatient care, about 80 percent of the HMO patients hospitalized for mental health treatment stayed less than two weeks.

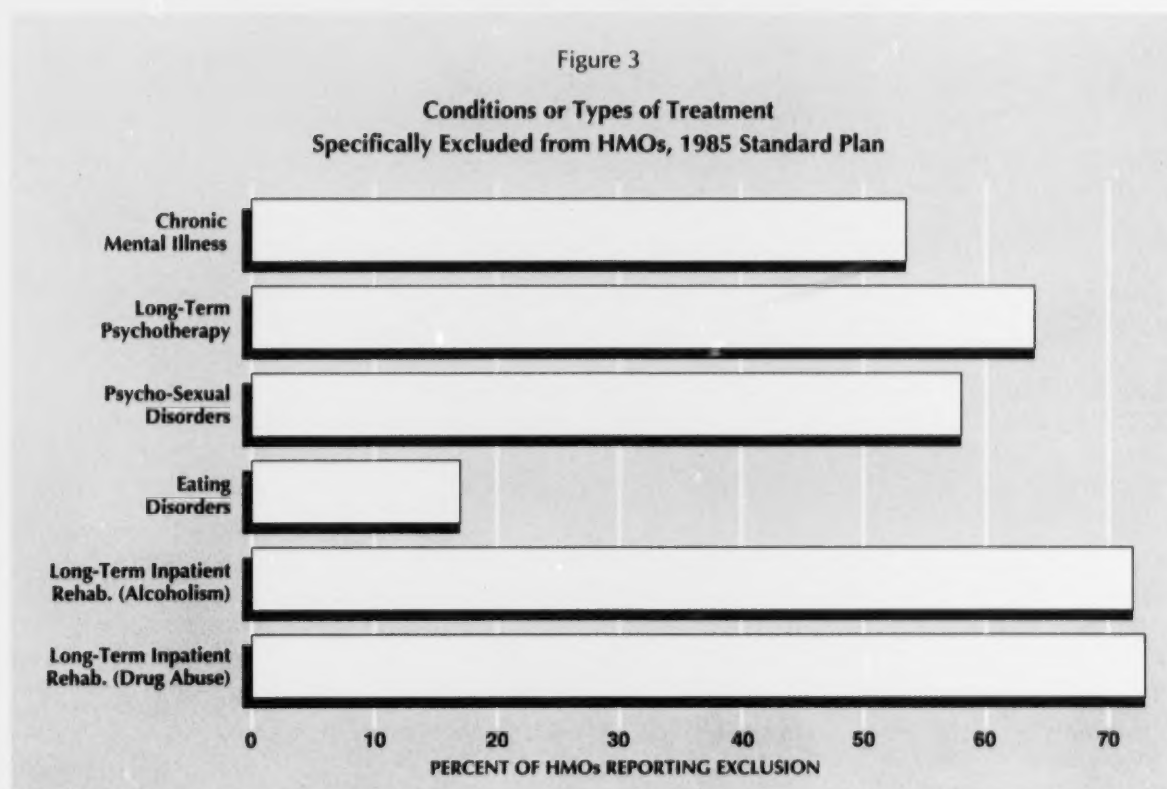
Three-quarters of respondent HMOs indicated that approval of the patient's primary care physician was required for any referral for mental health, alcohol, and drug abuse treatment. About half also reported that self-referral was permitted, suggesting that primary physician referral policies were not always strictly enforced. When HMO benefits were exhausted or did not cover specific courses of treatment, "out-referrals" were common; 19 HMOs reported referral of patients to state mental hospitals, 60 to other public mental hospitals, and 56 to a children's residential treatment center.

Benefit Coverage

Virtually all respondent HMOs reported that their benefit packages included some mental health coverage; however, several types of treatment were specifically excluded from HMO standard plans (see figure 3). The most common inpatient mental health benefit offered by HMOs was expressed in terms of allowable hospital days per benefit period, with an average coverage of 34.3 days. Outpatient benefits were most frequently defined by covered visits per benefit period. The HMOs reported an average of 21 covered visits with an average copayment of \$15.40 per visit.

Utilization

HMOs with at least two years of operating experience (N=191) were asked to provide utilization data. Of these plans, 82 reported



combined (alcohol, drug abuse treatment, and mental health care) bed days averaging 41.5 per 1,000 members per year. For mental health care only, bed days averaged 30.9 per 1,000 members, with 12.8 days being the average length of an inpatient stay. About 3.4 percent of HMO members received some types of mental health care in 1985 and, of those receiving treatment, 7.4 percent were hospitalized.

Comparisons of HMO Models

Analysis of the survey results revealed several statistically significant differences between IPA model HMOs (the fastest growing type of HMO) and other HMO models (see endnote 2). IPA model plans were less likely to have designated mental health directors and more likely to use hospital outpatient clinics for mental health treatment. They made more frequent use of private mental health practitioners and community hospitals, but used group therapy less often. IPA model HMOs were more likely to require primary physician referral in order for members to access mental health treatment. Overall, the treatment approach utilized by IPAs appeared to be relatively unstructured, relying on primary care physicians to control access and specialized mental health professionals to provide treatment (Shadle and Christianson 1988). Of course, there are substantial variations among the treatment approaches offered by IPAs that are obscured by this general characterization.

Literature Review

The discussion in the previous two sections highlights both the importance of learning more about mental health treatment for children and adolescents in HMOs—particularly in the new generation of HMOs—and the limitations

of what is known about the use of different mental health organizational and treatment approaches within HMOs. Unfortunately, existing published studies that have focused directly on mental health care for children and adolescents are useful primarily in identifying possible research issues rather than in providing results that are generalizable and/or applicable to the current HMO environment. The majority of this literature consists of case studies of mental health care delivery to children and adolescents in a single HMO (see table 1). Most of these studies were conducted during the 1970s and early 1980s when the HMO movement had not yet become the HMO industry. They typically were based in nonprofit staff or group model HMOs, and their findings therefore may have limited relevance for the most rapidly growing segment of the industry—the for-profit IPA. While other studies place a greater emphasis on data analysis (see table 2), relatively few comparisons to non-HMO populations of children and adolescents are attempted (for exceptions, see Jacobsen et al. 1980, and Diehr et al. 1984). The age groups covered by all of the studies vary, but the most frequently used definition of children includes persons 19 years or younger. Other reports utilize 18, 16, and 15 years in defining their study populations. Substantial variation also exists in the reported percentages of each HMO's total enrollment that children represent.

While the limitations of the existing literature are numerous and raise important questions about its relevance for the current HMO environment, we have attempted to summarize and contrast the findings of past studies below. This review is organized around specific topic areas addressed in at least two or more published articles. Its usefulness is primarily in identifying possible areas of future research and in conveying a sense of the difficulties that are likely to be encountered when conducting research in this area.

Incidence of Mental Health Diagnosis

The treated incidence rate of all diagnosed mental disorders for children and adolescents with no

prior recent mental disorder was estimated at approximately 3 percent in a relatively recent five-year study of a group model HMO in Maryland (Kessler 1984). This is considerably lower than the rate reported in several previous studies. Coleman et al. (1977) indicated that 8.9 percent of the patients who visited a pediatrician in a group model in Connecticut had a diagnosed emotional problem, while 15.5 percent of patients seen in the

pediatrics department of a Massachusetts staff model received a psychosocial diagnosis (Bennett and Gavalya 1982). Between 4.0 percent and 4.9 percent of children seen in the pediatrics departments in two HMOs (located in Maryland and Wisconsin) received a diagnosis of mental disorder (Jacobson et al. 1980). Diehr et al. (1984) found that between 3.6 percent and 13.3 percent of enrollees under 19 years in two Seattle HMOs had

Table 1
Descriptive or Single HMO Studies

Author/Date	Purpose of Study	Number of Participating HMOs	Selected Results	Comments
Garber, 1973	describes first year of pediatric-child psychiatry collaboration in HMO	1 staff model in Northeast	average # sessions was 3.7	1 year's data; 30 children and families children >18 evaluated
Goldensohn et al., 1971	describes mental health services for children	1 group model in Northeast	14.5 average number of services per patient	children <15, 12 month data
Kessler, 1984	documents treated incidence of mental disorder	1 group model in Northeast	3.7% incidence for total enrolled population; 3.0% for children and adolescents	children <19; study included HMO population only; 5 year cohort
Michelman, 1983	describes practice of child psychiatry in HMO	1 staff model in Midwest	>3% psychiatric hospitalization rate 66% of hospitalization referred out of plan	children <16
Bennett, Gavalya, 1982	describes evolution of child mental health department	1 staff model in Northeast	50% of child mental health cases managed by primary care staff. Average mental health referral seen 10 times or less. No psychiatric hospitalizations.	children ≤16, 6 month data
Coleman et. al, 1977	health department incidence, diagnoses, outcome of children with emotional problems	1 group model in Northeast	8.9% of children with emotional problems. No psychiatric hospitalizations in year 1; 5 in follow-up	children <19, 1 year data

some mental health use compared to less than 3 percent in a Blue Cross plan, although the Blue Cross members had more visits per user. Similarly, in a study of seven primary care settings, three of which were HMOs, Starfield et al. (1980) found that between 5 percent and 15 percent of children seen in a given year received a psychosocial diagnosis, while another 8 to 10 percent received a psychosomatic diagnosis.

One study reported a lower incidence of mental health diagnoses than Kessler. Williams et al. (1979), in their comparison of low-income enrollees in two Seattle HMOs, found that the percentage of enrollees under 20 years of age with a mental health visit varied from 2.0 percent to 5.8 percent (however, only visits with a primary mental health diagnosis were included).

Type/Duration of Treatment

Information regarding type and duration of mental health treatment provided to children is included in several of the studies reviewed. Goldensohn (1971) reported that 76 percent of mental health services provided to children were individual or family services, 21 percent were group therapy services, and 3 percent were testing services. There was greater use of group therapy among children treated (21 percent) than among adults (10 percent). On average, patients were seen 14.5 times per year, with a range from 1 to 60 services per patient per year. Thirteen percent of children undergoing mental health treatment received more than 30 visits. Bennett and Gavalya (1982) also found a relatively high utilization of family therapy (70 percent) with most patients—

Table 2
Studies With Comparative Data Analyses

Author/ Date	Purpose of Study	Participating Payment Models	Statistical Analyses	Selected Results	Comments
Diehr et al., 1984	Compare use, costs of mental health services in 3 health settings	1 IPA model 1 Staff model 1 FFS (BC) plan in Northwest	Calculated mean # M.H. visits by age, sex, setting; annualized and adjusted for age, sex difference among settings; significance tests	3.6-13.3% of chil- dren in HMOs with M.H. use; <3% on FFS. FFS had more M.H. visits per user	18 month study of children <19
Jacobson et al., 1980	Compare incidence of child mental disorder in 4 organized health settings	2 GP models 1 FFS community health center 1 FFS group prac- tice in Northwest and rural Midwest	Calculated mean # M.H. visits by age, sex, setting, medical depart- ment visited	3.3-10.1% of chil- dren with diag- nosed mental dis- order. FFS health center had highest rates	12 month study of children <18
Williams et al., 1979	Compare mental health utilization in 2 pre-paid health plans	1 SP model 1 IPA model in Northwest	Calculated mean # M.H. visits by age, sex, settings; confidence inter- vals	2.0-5.8% of chil- dren had primary mental health di- agnosis; IPA had lower incidence rate but greater # of visits per user	four year study of low income enrollee's children ≤19

(86 percent) seen 5 times or less and only 2 exceeding the HMO's 20-session benefit limitation.

The data reported by Diehr et al. (1984) indicate that enrollees under six years of age in two HMOs averaged between 0.7 and 1.3 ambulatory mental health visits per person-year. Enrollees ages 6 to 18 years old experienced from 1.4 to 2.9 visits per person-year. Jacobson et al. (1980) reported an average of 2.8 to 6.5 visits to two HMO mental health departments for patients under 18 years of age with a diagnosed mental disorder. Williams et al. (1979) found that low income children and adolescent utilizers in two HMOs had from 1.6 to 3.1 mental health visits per year.

Inpatient Utilization

Most of the published literature focuses on ambulatory utilization patterns. Of the few studies reporting inpatient utilization figures, Coleman et al. (1977) found no child psychiatric hospitalization during their one-year study period, although five HMO members in the 16- to 18-year-old age group were hospitalized in the follow-up period approximately one year later.

Michelman noted an annual adolescent hospitalization rate for diagnosed mental health patients of 3 percent (no children were hospitalized) in a large, staff model HMO. He stated that both severity of depression and lack of support systems (especially lack of outpatient therapy) were related to hospitalizations.

Types of Diagnosis

Jacobson et al. (1980) reported the distribution of mental disorders in children in two HMOs by diagnostic category. Transient situational disturbance was the most prevalent category of diagnosis in a Maryland HMO, and special psychiatric symptoms was the most common diagnosis for patients in a Wisconsin HMO, with the latter reflecting an emphasis on the treatment of specific learning disabilities. A high proportion of patients in both HMOs also received a diagnosis of behavior disorder of childhood and adolescence. The more

severe problems of organic brain syndrome, schizophrenia, and affective or other psychoses taken together were diagnosed in less than 3 percent of patients with a mental disorder.

Kessler (1984) also found high rates of acute mental disorder diagnoses in his 5-year study. Seventy-nine percent of one HMO's total cases were diagnosed as transient situational disturbances in the last year of the study, with behavioral disorders of children becoming less frequent throughout the study period.

Michelman (1983) states that, in a staff model HMO in Minnesota, severe conduct disorder patients represent the child and adolescent department's most common referral and also the patients most resistant to treatment. Differential diagnosis of conduct disorders includes substance abuse, affective disorders, paranoid disorders, psychosis, and epilepsy. Often there is concurrent diagnosis of attention deficit, learning disability, and family dysfunction.

In the Coleman et al. (1977) description of an HMO's mental health program for children, the most frequent presenting difficulty in 1974 was diagnosed as adjustment reaction (58 percent) followed by behavior disorder (30 percent). The diagnoses of psychoses or of personality disorder together occurred 12 percent of the time and were typically made in older children, ages 16 to 18 years.

Treatment Models

Several studies described specific mental health treatment approaches for children and adolescents in HMOs. The strengths and limitations of these approaches were discussed, as well as the overall effectiveness of HMOs in providing treatment of this type. The arguments in these articles are presented in an uncritical summary fashion below.

Strengths

The literature suggests that there are potential benefits for children who receive mental health services in HMO settings. The most frequently

cited advantage is the HMO's ability to promote integration of primary medical services and mental health services. Bittker and George (1980) describe an Arizona group model's "liaison team" approach to children's mental health services. The team, which includes a child psychiatrist, a child psychologist, and a pediatric nurse-clinician, are informed of all child referrals for mental health services. They coordinate the orientation and intake of identified patients and their families. Most parents attend a half-day clinic established to promote a better understanding of children's emotional problems. The HMO experienced a one-third decrease in the cancellation and drop-out rate after establishing the program.

Coleman et al. (1977) describe an integrated HMO mental health program for children in which a mental health clinician is included in the ongoing practice of the pediatrician; other mental health resources are available when indicated. The pediatric social worker is always available for discussion of problems and is active in about one-third of the cases presented. Advantages of this approach include the increasing willingness of the pediatrician to assume responsibility for the care of a broad range of emotional problems in children that do not require psychiatric intervention. Mental health screening becomes a natural function of the primary care team, thereby offering a structure of support to children and families with emotional problems.

Garber (1973) also describes a collaborative team approach at another staff model in Connecticut in which the psychiatrist plays a triaging and evaluating function. This allows for more appropriate use of child psychiatric time and avoids the fragmentation and delay often encountered when individual practitioners or agencies are involved. The availability of a unified medical record allowing for the recognition of significant patterns is noted as a help in the identification of emotional problems in children.

Similarly, Bennett and Gavalya (1982) state that about half of the patients diagnosed by pediatricians as having a psychosocial problem are referred to mental health specialists. The goal of

the program is described as the enhancement of the "growth-promoting and illness-preventing potential of the primary care system while providing the necessary specialized mental health service in house."

Some authors noted the ability of the HMO to offer specialized services to children with emotional problems. Holmberg (1975) describes a Washington staff model's home health service through which a visiting nurse child specialist worked exclusively with handicapped children and their parents. The article focused on assisting the child with minimal brain dysfunction (MBD) characterized by certain learning or behavioral disabilities. The nurse specialist in the HMO performed a variety of functions, including assessment, coordination, parent counseling, education, and referral. The visiting nurse was able to coordinate patient care through ongoing communication with other HMO clinicians.

Michelman (1983) notes other positive aspects of HMO child and adolescent mental health programs, including early identification of mental disorders, physical examinations by referring pediatricians, multiprogram psychotherapies, frequent therapist peer review, and an increasing expertise among therapists in focused, goal-oriented psychotherapy.

Many of the studies also mentioned that HMOs allow easy access to mental health services, primarily due to eliminating the financial barrier to outpatient care.

Limitations

The literature also contains examples of limitations in the way that HMOs provide child and adolescent mental health care. Michelman (1983) states that HMOs do not fully serve three types of chronic or chaotic patients and their families: hospitalized cases of schizophrenia, major affective disorder patients, and severe conduct disorder patients. Because of the 30-day maximum hospitalization policy in Michelman's HMO, two-thirds of its 1981 child psychiatry hospitalizations were eventually transferred to out-of-home, commu-

nity-funded placements. Besides the financial burden on the community, Michelman sees other negative results of these referrals—namely, fragmented patient care, possible discontinuation of medication management, and needless duplication of diagnostic evaluations.

Conduct disorder adolescents, Michelman observes, are particularly difficult for the HMO to treat on an outpatient basis due to resistance to this approach by HMO members. Adolescents usually do not stay in treatment without active parental support, and parents typically want to place these children in out-of-home programs as status offenders to impose physical restraints. In over 70 percent of such cases, HMO parents arranged for such placements for their children. The HMO hospitalized 21 percent, and the remainder were placed by courts and community agencies. Engstrom (1985), a psychiatrist in a Minnesota network model, maintains that from 15 to 25 percent of adolescents receiving inpatient treatment for chemical dependency are actually chemically dependent. The other 75 to 85 percent are institutionalized for "social reasons," often as a result of school and parental pressure to "get the kids off their hands." Parental concern is often expressed in an insistence upon inpatient treatment because it is regarded to be better than outpatient care. Engstrom believes that, while inpatient care is appropriate for some people, it is difficult to ascertain which ones, how many, and for how long. Part of the problem, Engstrom states, is the absence of agreement on what constitutes appropriate care in mental health and chemical dependency.

Research Issues

These studies represent an important but limited resource for understanding how HMOs deliver mental health services to children and adolescents. Variations in rates

quoted in the studies reviewed may reflect significant methodological, organizational, practice, and/or population differences. In addition, there are large gaps in our understanding of the effectiveness of HMOs in delivering mental health services to an employed, middle-income population, much less a subset of younger enrollees. The research needs in this area clearly are extensive and cannot be catalogued completely within the limits of this paper. In this section, we identify broad areas of research that we believe deserve high priority. Detailed specifications of research hypotheses would be premature given the existing state of knowledge.

Development of a Data Base on Existing Methods for the Delivery of Mental Health Care to Children and Adolescents in HMOs

Assuming that there is considerable variation in the approaches taken by HMOs in the delivery of child and adolescent mental health care, research to evaluate the efficacy of alternative approaches would be of interest to policymakers, mental health professionals, and HMO managers. As an example, one might ask if HMOs that use a multidisciplinary health team that includes a mental health specialist are more effective at patient management. Jacobson et al. (1980) state that the answer to this question would be valuable in determining the best way to organize pediatric practice or care patterns. Other studies (Bittker and George 1980, Coleman 1977, Garber 1973, Bennett and Gavalya 1982) suggest that HMOs with internal child mental health departments are better able to promote integrated medical and mental health services. Alternatively, one might assess the relative benefits of treatment approaches that emphasize pediatric, as opposed to specialist-provided, mental health services. As Garber (1973) notes, "It stands to reason that immediate response to the specific needs of the developing child and his family should prevent serious psychological distress in many instances. The pediatrician is 'on the scene' ...thereby providing continuous and informed guidance and (when necessary) early intervention."

While reports of the virtues of particular treatment approaches in individual HMOs can be enlightening, they need to be confirmed with carefully structured studies involving multiple HMOs. Pooled cross-section, time series data collected from patients under a variety of HMO treatment models could be used to relate cost, utilization, and patient outcomes to specific treatment approaches, controlling for other relevant factors.

Comparison of Patient Costs and Outcomes under HMO Treatment Models with Fee-for-Service Models

HMOs have financial motives to contain costs, particularly in markets where there is vigorous competition for enrollees among HMOs. In general, studies of HMOs suggest that they deliver care using fewer resources than the fee-for-service system, primarily by reducing inpatient admissions and lengths of stay (Luft 1980, Manning et al. 1984, Wolinsky 1980). There have been no recent studies, however, that compare the costs of mental health treatment for children and adolescents in HMOs versus the fee-for-service system. If cost differences are found, it also would be of interest to determine how they were generated. Do savings occur because of fewer hospital admissions (as in the general population), the substitution of less costly personnel to provide outpatient treatment, a more limited benefit structure for HMOs than for fee-for-service insurance plans, internal barriers to access in an HMO, more effective diagnosis of illness, or for other reasons?

In parallel with studies that compare treatment costs and resource utilization, it is equally important to assess how mentally ill children and adolescents fare in HMOs versus the fee-for-service system. One component of this issue relates to the relative satisfaction of HMO enrollees with their access to care and the service they receive. Evidence of this kind is useful in itself and also would contribute to an explanation of any differences in utilization patterns observed between HMOs and fee-for-service providers. If differential access and service use were found, it would be important to

determine its impact on quality of care and long-term patient outcomes. The general literature suggests that HMOs deliver care that compares favorably along quality dimensions with that found in the fee-for-service system (Cunningham and Williamson 1980, Luft 1980). These studies typically were based on established, group practice HMOs, however, and often did not employ rigorous research designs. The applicability of their findings to mental health care for children and adolescents in the current cost-conscious, competitive environment where IPAs are growing in importance is clearly questionable.

Assessment of the Impact of HMO Growth on Specialized, Community-Based Mental Health Programs for Children and Adolescents

The appropriateness of the restrictions placed by HMOs on member access to community mental health programs has been a controversial issue, particularly as these restrictions relate to public program beneficiaries enrolled in HMOs. Proponents of these programs have expressed concern that the rationing mechanisms used by HMOs either explicitly (e.g., through limits on self-referral or the use of per-admission authorization requirements) or implicitly (e.g., through long waiting times for appointments or strict interpretation of medical necessity) could inappropriately limit access to needed services and consequently have a detrimental impact on patient well-being (Christianson 1987). Of course, if HMOs limit referrals to specialized treatment programs administered by nonparticipating providers, the financial viability of these programs could be jeopardized by growing HMO enrollment. Research is needed to document interrelationships between HMOs and specialized mental health treatment programs for children and adolescents, including the nature of contractual relationships, referral criteria, and reimbursements for services provided to HMO members on an emergency basis.

Methodological Issues

The previous section identified several areas of possible research on the delivery of mental health care to children and adolescents in HMOs. In this section, we discuss two general difficulties likely to be encountered in carving out this research agenda, and suggest possible ways to address them.

Soliciting HMO Participation

The transformation of the HMO movement to the HMO industry seems to have been accompanied by a greater reluctance on the part of HMOs to supply information in response to surveys, even when these surveys are well established. For instance, Wholey, Sanchez, and Christianson (1988) note that the response to questions on InterStudy's National HMO Census relating to annual hospital and ambulatory care utilization per thousand members has declined dramatically from an 85 percent response for hospital utilization in 1980 to a 40 percent response to the same question in 1986. In their analysis of variation in response rates over time, they find a declining secular trend even after controlling for other factors. In addition to being time dependent, response rates appear to be negatively related to corporate sponsorship (excluding Kaiser Permanente and Blue Cross/Blue Shield) and HMO market share, but positively related to federal qualification, community hospital costs, and population growth. IPAs are somewhat less likely to respond than are group/staff models. Where HMOs have responded previously, new affiliations with national firms are associated with decisions to stop responding.

A preliminary analysis was also conducted regarding response to InterStudy's 1985 HMO survey of mental health, alcohol, and chemical dependency treatment. This analysis found no relationship between survey response and corporate affiliation. The analysis did find, however, that age, enrollment, federal qualification, and not-for-profit

status were positively related to survey response. IPA-HMOs were found to be less likely than other models to respond. Overall, with extensive follow-up efforts, a response rate of 60 percent was achieved. For questions relating to utilization and cost, however, the maximum response rate was 43 percent.

These analyses indicate that collecting data from HMOs is becoming increasingly difficult. Current industry trends relating to growth in the relative importance of IPAs, for-profit firms, and national firms suggest that securing data from HMOs for research purposes will not become easier in the near future. Increasing competition among HMOs, along with an escalating number of requests for data, can only exacerbate this problem.

Securing the cooperation of HMOs industry-wide is important for undertaking any of the research identified above, but is especially critical for attempts to catalog existing delivery methods. The Group Health Association of America (GHA) initiated a Comparative Data Base for Managed Care Systems effective January 1987. Each annual survey includes a special topic section. It may be possible to collect the necessary general information on existing delivery methods through this vehicle, although the response rate to the initial survey was only 52 percent (Research activities 1988).

Creating Comparison Groups

In order to compare patient costs and outcomes for children and adolescents in HMOs versus other financing and delivery arrangements, a comparison group methodology must be developed. Ideally, from a research perspective, mentally ill children and adolescents would be randomly assigned between HMOs and other delivery systems. Then, utilization, costs, and access to services would be measured comprehensively over time for both groups. Basic documentation of beneficiary pathways, or treatment histories, would be developed for use in assessing quality of care, and functional ability, mental health status, and satisfaction would be assessed periodically. Using these data, the two groups would be compared to deter-

mine if any statistically significant differences existed that could be attributed to HMO enrollment.

Unfortunately, randomized experiments of this type are not likely to be feasible. It is more likely that enrollment in HMOs will be voluntary. The natural comparison group consists of members who choose not to enroll in an HMO. This group may be fundamentally different from the group choosing an HMO, however, and the analysis will be forced to rely on statistical methodologies to control for *ex ante* differences in characteristics. An important drawback to this approach is that all relevant beneficiary characteristics associated with cost, access, or quality differences may not be controlled for in the analysis. Indeed, they may not be observable or quantifiable. Thus, statistically significant differences found using this approach will always be less conclusive than those detected using randomized research designs.

For these reasons, it may be necessary to supplement comparison group studies with pretest/posttest designs. Children with mental illness could be followed over a period of time prior to enrollment in an HMO and then after enrollment. The posttest period would need to be long enough to allow for treatment methods to change and for those changes to have an impact on outcome measures. As the length of the study period increases, however, so does the likelihood that posttest observed changes would reflect influences in addition to HMO enrollment.

Summary

For the reasons discussed above, it seems unlikely that definitive answers relating to comparative costs and patient outcomes will be generated through large studies based on randomized designs or studies involving multiple HMOs, desirable as they may be. Instead, knowledge concerning the impact of HMOs on the nature of the mental health care received by children and adolescents, the costs, and patient outcomes, seems more likely to be advanced incrementally, based on evalua-

tions tailored to the idiosyncrasies of particular HMO programs or through comparisons of limited numbers of programs. The challenge to policymakers will continue to be synthesizing these findings to reach conclusions regarding their generalizability. This challenge is complicated by the structural changes that are currently reshaping the HMO industry.

Endnotes

1. The rate of growth in enrollment apparently slowed from July to September 1987, with membership increasing by less than 1 percent. This appears to be the slowest rate of increase since 1970, although quarterly enrollment data are not available for all quarters since that time (New York Times 1988).
2. An Individual Practice Association (IPA) is defined as an HMO that contracts directly with physicians in independent practices; and/or contracts with one or more associations of physicians in independent practice; and/or contracts with one or more multispecialty group practices, but is predominantly organized around solo/single specialty practices. In contrast, staff models deliver services through a physician group that is controlled by the HMO and group models contract with only one independent group practice to provide health services. Network models contract with two or more independent group practices, and possibly a few solo practices, but are predominantly organized around groups. IPAs are easier to establish than other models because physicians do not have to alter their practice substantially to join them. They are attractive to consumers because they offer ease of access and choice among a relatively large number of physicians. The research evidence indicates, however, that they are less successful than other models in controlling hospital utilization of members and, hence, overall costs. For a discussion of the ways in which the delivery of mental health care in IPAs differs from other models, see Shadle and Christianson (1988).

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Financing Child and Adolescent Inpatient Mental Health Services Through Private Insurance

Introduction

The issue of the financing of mental health services for children and adolescents is assuming increasing importance as the need for mental health services, use patterns, and costs of treatment of this special population group become better documented. Synthesis of data from several epidemiological studies shows that from 12 to 15 percent of individuals in the United States who are less than 18 years of age are in need of mental health treatment; however, the treated prevalence is only approximately 6 percent of this age group (Saxe et al. 1987). The suicide rate among children and adolescents has increased dramatically in recent years, tripling for the 10- to 14-year-old age group and quadrupling for the 15- to 19-year-old age group between 1950 and 1980 (Schaffer 1981). The prevalence of alcohol and other substance abuse, especially cocaine, is increasing; while, at the same time, the age at onset is decreasing (Semlitz and Gold 1986).

There is also a trend toward the greater use of private inpatient facilities for the treatment of children and adolescents. Between 1970 and 1980, the number of inpatient psychiatric admissions to private psychiatric facilities for 10- to 17-year-olds increased by 150 percent and to private general hospitals with psychiatric units increased by 25 percent (Thompson et al. 1986).

Increasing attention is also focusing on the costs of providing psychiatric services to children and adolescents, largely because this population group is particularly expensive to treat. In a study of one corporation's experience of utilization of mental health services by employees and their dependents, it was found that, given any use of mental health services, adolescents were significantly more likely to be inpatient users than were adults. Their mean length of stay was 50 percent longer than adults with inpatient stays. Although

less than 4 percent of mental health users were adolescents with an inpatient stay, this group alone accounted for almost 30 percent of the mental health expenditures of this corporation (Horgan et al. 1988). In another study of a private insurance carrier, it was found that 38 percent of adolescent inpatient stays were greater than 30 days, versus 12 percent for adults, and that 40 percent of adolescent stays cost more than \$10,000, versus 22 percent for adults (Goldstein et al. 1988). Lengths of stay vary across settings, although the relationship of longer stays for children and adolescents remains. In 1980, the median length of stay for individuals under 18 years of age was 36 days in private psychiatric hospitals and 14 days in general hospitals with psychiatric units (Milazzo-Sayre et al. 1986), and 24 percent of admissions to private psychiatric hospitals for this age group resulted in lengths of stay greater than 90 days (Thompson et al. 1986).

It has been estimated that 77 percent of individuals 18 years of age and under are covered by private insurance (Farley 1986); thus, the principal source of payment for psychiatric services for this sizable group, at least until benefits are exhausted, is private insurance. The purpose of this paper is to examine the use of inpatient psychiatric services by children and adolescents who are covered by private insurance policies.

Insurance for psychiatric conditions is typically more restrictive than for medical care. Not only are treatments by certain types of providers and for certain conditions (e.g., substance abuse) excluded, but frequently lower levels of benefits are specified for psychiatric conditions than for medical services. In 1977, 60 percent of privately insured persons had policies in which psychiatric and medical care were treated differently (Farley 1986). Where psychiatric services are less generous, the most frequently occurring limitations are: maximum duration of stay limits, usually on a per year basis, and separate lower dollar maximums for psychiatric care, either on an annual or lifetime basis (Muszynski et al. 1983).

There are strong incentives in the provision of mental health services to shape the treatment plan around the extent of reimbursable services. Many mental health professionals include the generosity of insurance benefits among the most important factors influencing the length of stay for inpatient services (Mezzich and Coffman 1985). We will focus on this issue by examining how inpatient use varies across companies which have different benefit packages. In particular, we will examine inpatient stays in relation to the structure of insurance benefits, such as patterns in length of stay taking into account critical benefit thresholds. We will compare children and adolescent inpatient use with adult inpatient use to determine if the benefit structure differentially impacts the younger age groups.

Patterns of Utilization of Children's Mental Health Services under Private Insurance

This section describes patterns of utilization of inpatient psychiatric care for children and adults in eight corporations. Focus in this analysis is on inpatient care, which accounts for 75 percent or more of the cost of children's mental health care (Horgan et al. 1988). Data from eight companies with differing benefit plans show how patterns of care may depend on insurance coverage. The discussion is primarily a descriptive one. The implications of these findings for financing children's mental health care are considered in the third section.

Data

Data are from one insurance carrier in a mid-western state. The eight accounts (companies) with the largest number of psychiatric claims were selected for this analysis. The size of the eligible population ranges from 5,800 to 48,000 individuals (see table 1). Data consist of insurance

claims for psychiatric and substance abuse inpatient admissions from the period from October 1984 through December 1986. Discharge diagnosis (ICD-9), patient age, length of stay (LOS), and covered hospital charges were available from the hospital claim. Covered charges corresponding to services billed by physician or other professionals during the hospital stay were added to the hospital charge to yield the total charges submitted to the insurer for an admission. The insurer pays a proportion of charges at each hospital,

averaging roughly 91 percent. Physicians are paid usual, customary, and reasonable charges. Charges in these data are thus a good indicator of cost to the payer.

Coverage for inpatient psychiatric and substance abuse care varied among the eight companies. Table 1 summarizes the main features of the coverages in the companies we have labeled S through Z. Coverage features are summarized and some details omitted in order to protect the anonymity of the insurer and the companies.

Table 1
Mental Health Benefits for Eight Companies

	S	T	U	V	W*	X	Y	Z
Inpatient Mental Covered Limit	none	45 days per admission	45 days per admission	45 days per admission	30 days per year	45 days per admission	60 days per year	Same benefits
Cost Sharing	none	none	none	none	20% after 30 days until stop-loss	none	20% after 60 days up to \$1500 in benefit	as Y
Inpatient Sub. Abuse Covered Limit	none	45 days per admission	45 days per admission	45 days per admission	30 days per year	45 days per admission	28 days per year	
Cost Sharing	none							
Outpatient Covered Limit	none	\$1000	\$1000	\$1000		\$1000	\$1500	
Cost Sharing	50%	minor	minor	minor	50% no limit	minor	20%	
Other Features Stop-Loss					\$1000			
Average No. of Eligibles in 1985	23,709	5,095	25,224	48,531	13,679	9,776	5,803	13,515

* Some employees switched to a plan covering 90 percent of charges up to a smaller stop-loss for both inpatient and outpatient costs.

Four of the eight companies have essentially the same insurance benefits for mental health and substance abuse. Companies T, U, V, and X have a 45-day limit per admission for inpatient care and essentially first-dollar outpatient coverage up to a \$1,000 annual limit. Company W requires employee cost sharing beginning after 30 days in a year. A stop-loss for all conditions of \$1,000 per person limits an employee's out-of-pocket expense. Companies Y and Z have the same benefits. After 60 days of coverage per year, an employee of these companies pays 20 percent of costs up to a major medical benefit limit of \$1,500. This benefit limit applies to other services as well, including outpatient mental health. For employees in most situations in which other health care expenditures are necessary, this benefit is essentially 60 days of coverage. Company S has the most extensive coverage for inpatient mental health care and is the only company which covers mental illness and substance abuse inpatient treatment on the same basis as other conditions, with no annual limit on days or dollars. Outpatient mental health care, at 50 percent of charges, has a higher cost sharing than for other conditions.

Discharge diagnoses on the hospital claim reflect the *International Classification of Diseases* (Ninth Revision) (ICD-9). For the purposes of this descriptive analysis, mental disorders (290-316) have been further collapsed into six groups, as shown in table 2. Diagnoses for mental retardation (317-319) have been excluded from the analysis. Several diagnoses are listed in table 2 which, in fact, did not account for any inpatient claim (290, 314, 315, and 316).

Insurance claims provide very accurate financial data by virtue of the fact that their primary function relates to payment; however, this type of data may be less accurate for diagnostic information. In particular, more severe psychiatric diagnoses may be masked under less severe psychiatric diagnoses. It is difficult, however, to mask an inpatient psychiatric diagnosis as nonpsychiatric. Claims analysis only allows an examination of mental health problems which receive a psychiatric diagnosis; thus, there is no way of knowing

whether mental health problems might have been associated with a particular episode of care for which the claim does not contain a psychiatric diagnosis. Sociodemographic data, other than age, gender, and relationship to subscriber, and data related to treatment modalities are generally not recorded on insurance claims. The strength of the data source thus relates to financial information, which is the focus of this paper.

Age and Diagnosis

The distribution of admissions by diagnosis and age for all eight companies is shown in table 3. Persons 21 years of age and younger (virtually all of these are dependents) account for 23 percent of all admissions.

For adults, psychoses (46.9 percent) and substance abuse (35.4 percent) account for the majority of admissions. In the 13-21 age group, substance abuse is the single largest category of admissions, accounting for over one-third of the admissions for adolescents. Compared with adults, however, children and adolescents have disproportionately fewer admissions for psychoses and major affective disorders (19 percent for the 0-21 age group versus 46.7 percent for adults). Diagnoses related to childhood mental disorders account for a substantial proportion of admissions for the younger age groups (23.9 percent of children and 14.6 percent of adolescents). Neuroses and adjustment reactions account for a slightly higher proportion of admissions for children and adolescents (19 percent) than for adults (13 percent).

Table 4 shows the hospital charges for each age and discharge diagnosis. Whereas children and adolescents account for 23 percent of admissions, as noted above, they account for 33 percent of charges, reflecting the longer average length of treatment for these younger age groups. Within each age category, the pattern of charges follows closely the pattern of admissions, indicating that the average charge per admission is not radically different across diagnoses for each age group. There are, however, major differences in average

charge per admission for different age groups. Average charge per admission for the three age groups are 0-12 years—\$1,369; 13-21 years—\$7,131; and 22-64 years—\$4,722. Thus, inpatient admissions for adolescents are substantially more expensive than for adults.

Rates of Utilization

Data on the number of eligible employees and dependents in each plan, together with the utilization data just described, permit a calculation of the rates of use in each company and for each age

Table 2
Mental Disorder Diagnostic Recoding Scheme

Recode Group	ICD-9
1. Psychoses and Major Affective Disorders	290 Senile organic psychotic conditions
	291 Alcoholic psychoses
	292 Drug psychoses
	293 Transient organic psychotic conditions
	294 Other organic psychotic conditions
	295 Schizophrenic disorders
	296 Affective psychoses
	297 Paranoid states
	298 Other nonorganic psychoses
	299 Psychoses with origin specific to childhood
2. Neuroses and Reactions	300 Neurotic disorders
	308 Acute reaction to stress
	309 Adjustment reaction
3. Depressive Disorder	311 Depressive disorder, not elsewhere classified
4. Childhood Disorders	312 Disturbance of conduct, not elsewhere classified
	313 Disturbance of emotions, specific to childhood and adolescence
	314 Hyperkinetic syndrome of childhood
	315 Specific delays in development
	316 Psychic factors associated with disease classified elsewhere
5. Substance Abuse	303 Alcohol dependence syndrome
	304 Drug dependence
	305 Nondependent abuse of drugs
6. Other	301 Personality disorders
	302 Sexual deviations and disorders
	306 Physiological malfunction arising from mental factors
	307 Special symptoms, not elsewhere classified
	3130 Nonpsychotic mental disorders due to organic brain damage

group. The eligibility numbers used in table 5 are the average monthly eligibility as supplied by the carrier. A stable estimate of rates of use, particularly for smaller companies, for low-frequency events such as use of inpatient mental health care may not be possible with only 2 years of data; thus, these rates of utilization should be interpreted cautiously.

For all companies and all age groups, there were 8.9 admissions per thousand eligibles per year, 152 days of care per thousand eligibles per year, and an average per eligible covered charge of \$47.18 attributable to inpatient mental health care. The rate of admissions increases with age, but days of care for the 13-21 age group is about the same as for adults because of a longer length of stay. Charges per eligible are also comparable for adults and adolescents.

One notable pattern in these data is the relative constancy of the days per thousand and covered charges per thousand for the 13-21 age group. Four of eight companies have days per thousand within \$40 of the mean; six of eight companies have covered charges per thousand within \$10 of the mean. The relative constancy does not hold as strongly for eligibles in the 22-65 or 0-12 groupings.

Rates of utilization in a population are influenced by many factors in addition to insurance coverage. In a typical cross-sectional investigation of the determinants of mental health use, insurance coverage might be the single most important variable, but itself only explains perhaps 5 percent of the variance in the sample. It should not be expected, therefore, that we observe in these data from numerous companies a clear link between insurance and use rates.

Table 3
Distribution of Admissions by Diagnosis and Age
All Companies 1984-86
(row frequencies in parentheses)

	Diagnosis						Total
	Psychoses and Major Affective Disorders	Neuroses/ Adj. Reaction	Depressive Disorder	Childhood Disorder	Substance Abuse	Other	
Age							
12 or less	9 (19.6)	9 (19.6)	6 (13.0)	11 (23.9)	5 (10.9)	6 (13.0)	46 (100.0%)
13-21	112 (19.7)	110 (19.4)	31 (5.5)	83 (14.6)	194 (34.2)	38 (6.7)	568 (100.0%)
22-64	944 (46.9)	261 (13.0)	36 (1.8)	3 (0.2)	712 (35.4)	55 (2.7)	2011 (100.0%)
Total	1065 (40.6)	380 (14.5)	73 (2.9)	97 (3.7)	911 (34.7)	99 (3.8)	2625 (100.0%)

Companies T, U, V, and X, with the same benefit package, do, however, have similar total costs per person. For adolescents, the costs per covered person per year vary in the small range from \$50–60 per person per year. Company W has the most strict day limit, and the lowest overall use in the sample. Companies Y and Z, with 60-day limits per year (and some minor coverage following that), have greater total use. It is somewhat surprising that Company S, which has the most extensive inpatient coverage, has a use rate for adolescents that is only at about the average for the entire group. The adult rates for this company are in fact the lowest in the sample. Other characteristics of this population may be a strong influence on use of care.

Age and Length of Stay

The median LOS figure for the three age groups in these data are 0–12—26 days; 13–21—20 days; and 22–64—13 days. Table 6 indicates that short stays (10 days or less) make up almost 44 percent of adult admissions, whereas about one-third of admissions in the younger age groups are 10 days or less (see table 6). In addition, children are much more likely to be treated with a very long hospital stay. Thirty-three percent of children's admissions and 23 percent of adolescent admissions are greater than 40 days, whereas only 3 percent of adult admissions exceed 40 days. While children and adolescents represent only 23 percent of all admissions, they constitute two-thirds of the admissions with a length of stay greater than 50 days.

Data on charges accounted for by admissions of various lengths of stay emphasize the import-

Table 4
Distribution of Charges (in \$1000s) by Diagnosis and Age
All Companies 1984-86
(row frequencies in parentheses)

	Diagnosis						Total
	Psychoses and Major Affective Disorders	Neuroses/ Adj. Reaction	Depressive Disorder	Childhood Disorder	Substance Abuse	Other	
Age							
12 or less	58.1 (11.1)	220.6 (42.1)	65.5 (12.5)	126.5 (24.2)	20.9 (4.0)	31.4 (6.0)	523.0 (100.0%)
13-21	734.0 (18.1)	539.4 (15.8)	430.9 (10.6)	726.9 (18.0)	1254.8 (31.0)	264.2 (6.5)	4050.3 (100.0%)
22-64	4786.3 (50.4)	700.0 (7.4)	190.7 (2.0)	4.9 (0.1)	3612.5 (38.0)	201.8 (2.1)	9496.3 (100.0%)
Total	5578.5 (39.7)	1560.0 (11.1)	687.1 (4.9)	858.4 (6.1)	4888.3 (34.7)	479.4 (3.5)	14069.6 (100.0%)

Table 5
Admissions, Days of Care,
and Covered Charges (in \$1000s) Per 1000 Eligibles
All Companies 1984-86

Admission Days Charges	Company								All Companies
	S	T	U	V	W	X	Y	Z	
Age 0-12	0.5	0.0	1.1	1.7	0.6	0.0	0.5	0.3	0.9
	30.4	0.0	24.3	39.4	22.3	0.0	16.8	7.0	24.6
	\$13.41	\$0.00	\$5.48	\$12.61	\$2.06	\$0.00	\$21.50	\$2.77	\$10.39
Age 13-21	5.7	7.8	7.4	11.5	5.5	6.6	3.1	11.5	8.0
	187.1	177.5	217.3	223.1	121.9	199.8	49.4	286.5	181.3
	\$53.73	\$50.49	\$57.69	\$61.19	\$31.09	\$52.89	\$18.25	\$86.51	\$56.22
Age 22-64	4.1	13.9	15.0	16.5	4.5	11.9	9.1	10.6	11.6
	61.0	266.2	304.2	216.8	65.6	187.6	137.9	286.5	178.6
	\$18.55	\$70.98	\$73.81	\$61.96	\$19.55	\$53.47	\$50.15	\$56.77	\$54.57
All Ages	3.7	9.3	10.4	12.8	3.8	9.3	6.5	7.9	8.9
	74.9	183.2	227.7	188.7	66.6	173.1	100.0	148.2	152.1
	\$23.03	\$49.47	\$56.47	\$53.51	\$17.87	\$45.77	\$37.90	\$47.21	\$47.18

Table 6
Distribution of Admissions by LOS and Age
All Companies 1984-86
(row frequencies in parentheses)

	Length of Stay (in days)								Total
	1-5	6-10	11-20	21-30	31-40	41-50	51-100	101+	
Age									
12	12	3	1	12	6	10	2	1	47
or less	(25.5)	(6.4)	(2.1)	(25.5)	(12.8)	(21.3)	(9.3)	(2.1)	(100%)
13-21	112	78	93	96	62	111	14	3	569
	(19.7)	(13.7)	(16.3)	(16.9)	(10.9)	(19.5)	(2.5)	(0.5)	(100%)
22-64	527	347	451	505	118	57	6	0	2011
	(26.2)	(17.3)	(22.4)	(25.1)	(5.9)	(2.3)	(0.3)	(0.0)	(100%)
Total	651	428	545	613	186	178	22	4	2627
	(24.8)	(16.3)	(20.8)	(23.3)	(7.1)	(6.8)	(0.8)	(0.2)	(100%)

ance of the long-stay adolescent patient. Table 7 shows that for adults, only 8 percent of the charges are accounted for by admissions in which the length of stay was greater than 40 days. For children, admissions exceeding 40 days account for 62.2 percent of the inpatient mental health costs; for adolescents, these admissions account for 48 percent of the costs.

Benefit Limits and Length of Stay

Costs for inpatient mental health care can be influenced in a variety of ways, with some focusing on the provider and others on the patient. For example, payment for a hospital stay in which the rate is set prospectively gives providers incentives to reduce length of stay and cost. Prior authorization requires payer approval before treatment is extended.

Patient cost sharing through coinsurance and deductibles makes the patient or his or her family partly responsible for the costs of care. By far, the most common method for addressing inpatient

mental health costs, however, is to limit the number of covered days. All companies except company S use some form of day limit for inpatient mental health services.

From table 6, it is clear that this form of cost control will primarily fall upon the services received by children and adolescents, because they are the patients who are most likely to have extended hospitalization. Table 8 presents data for each company on the length of stay for the 13- to 21-year-olds. It shows the importance of limits on the number of covered days and how these limits affect children's and adolescent's use of services. Companies T, U, V, and X have a 45-day covered limit per admission. This limit is rarely exceeded for children of employees in those companies. Although the numbers in each cell are small, it is interesting to compare the patterns of care in those companies with the length of stay distribution in Companies S and Z with more generous benefits. In both S and Z, 15 percent of the admissions from the 13-21 age group have a length of stay greater than 50 days.

Table 7
Distribution of Charges (in \$1000s) by LOS and Age
All Companies 1984-86
(row frequencies in parentheses)

	Length of Stay (in days)								Total
	1-5	6-10	11-20	21-30	31-40	41-50	51-100	101+	
Age									
12 or less	11.7 (2.2)	6.4 (1.2)	4.3 (0.82)	99.0 (18.6)	80.0 (15.0)	153.6 (28.9)	130.5 (24.5)	46.6 (8.8)	532.1 (100%)
13-21	118.6 (2.9)	212.6 (5.2)	439.8 (10.8)	734.7 (18.11)	621.8 (15.3)	1492.3 (36.8)	290.8 (6.9)	157.6 (3.9)	4,058.2 (100%)
22-64	711.6 (7.5)	974.1 (10.3)	2128.8 (22.4)	3695.0 (38.9)	1160.5 (12.2)	677.6 (7.1)	148.8 (1.2)	0 (0.0)	9,496.3 (100%)
Total	841.9 (6.0)	1193.1 (8.5)	2572.8 (19.3)	4528.7 (32.2)	1862.3 (13.2)	2323.4 (16.5)	560.1 (4.0)	204.1 (1.5)	14,086.6 (100%)

Discussion

In summary, inpatient psychiatric admissions for children and adolescents have average lengths of stay which are substantially longer than for adults, are more likely to result in very long lengths of stay, and have a greater chance of being catastrophically expensive. Our data also show that the structuring of the benefit package with respect to limits on days of inpatient psychiatric care is an effective way of controlling utilization. Given that children and adolescents are much more likely to have long lengths of stay, this

particular benefit design feature differentially impacts on this younger population. Insurance design and reimbursement systems should therefore take into account the longer lengths of stay of younger patients.

It is also noteworthy that, for all of the companies which we examined, benefits were structured exclusively in terms of inpatient or outpatient services. Alternative settings which might have an impact on shortening hospital stays, such as day hospitalization to replace the school setting or night hospitalization to replace the family living setting, were not explicitly included in the insurance package. To the extent that these services can be covered through flexible administration of ben-

Table 8
Distribution of Admissions by LOS for 13-21 Year Olds
(row frequencies in parentheses)

Company	Length of Stay (in days)								Total
	1-5	6-10	11-20	21-30	31-40	41-50	51-100	101+	
S	3 (7.7)	2 (5.1)	5 (12.8)	13 (33.3)	3 (7.7)	7 (18.0)	4 (10.3)	2 (5.1)	39 (100%)
T	1 (5.6)	5 (27.8)	3 (16.7)	3 (16.7)	1 (5.6)	5 (27.8)	0 (0.0)	0 (0.0)	18 (100%)
U	11 (13.3)	5 (6.0)	10 (12.1)	12 (14.5)	11 (13.3)	33 (40.0)	1 (1.2)	0 (0.0)	83 (100%)
V	68 (24.1)	47 (16.7)	48 (17.0)	39 (13.8)	31 (11.0)	49 (17.4)	0 (0.0)	0 (0.0)	282 (100%)
W	6 (19.2)	6 (18.2)	3 (9.1)	11 (33.3)	3 (9.1)	3 (9.1)	1 (3.0)	0 (0.0)	33 (100%)
X	2 (7.7)	0 (0.0)	6 (23.1)	5 (19.2)	3 (11.5)	10 (38.5)	0 (0.0)	0 (0.0)	26 (100%)
Y	10 (26.3)	6 (15.8)	9 (23.7)	7 (18.4)	4 (10.5)	1 (2.6)	1 (2.6)	0 (0.0)	38 (100%)
Z	11 (22.0)	7 (14.0)	9 (18.0)	6 (12.0)	6 (12.0)	3 (6.0)	7 (14.0)	1 (2.0)	50 (100%)
Total	112 (19.7)	78 (13.7)	93 (16.3)	96 (16.9)	62 (10.9)	111 (19.5)	14 (2.5)	3 (0.5)	569 (100%)

efits, such as through individualized case management, it is probably of benefit to children and adolescents.

Although our results clearly document the longer lengths of stay associated with inpatient psychiatric stays for children and adolescents, we were not able with our data base to ascertain the reasons for these longer lengths of stay and the associated higher costs. Clinical experience indicates that, although the adolescent is the designated patient, frequently the situation reflects family problems, such as marital conflict, family disruption, physical or sexual abuse, or parental alcoholism. Thus, the decision to discharge may be influenced by family dysfunction, as well as by the condition of the patient. Anecdotal evidence suggests that, in many communities, there is difficulty in locating alternative settings for children and adolescents who are unable to return home. Children and adolescents may be more difficult to treat, thus contributing to longer lengths of stay. Other possible explanations relate to whether the treatment goals for children and adolescents are different than for adults.

Future research on the financing of child and adolescent mental health services under private insurance should focus on the role played by outpatient services and the relationship between outpatient and inpatient care (Goldstein and Horgan *forthcoming*). Also, substantial numbers of admissions for young people are for substance abuse. Many benefit packages have different coverage for alcohol and drug abuse services than for psychiatric services. The impact of this differential coverage is another area of future research. The setting of care should be explored, especially the role of specialized children's facilities, given the growth in the number of these facilities in recent years (Dorwart et al. *forthcoming*). This kind of research can be conducted using insurance claims; however, it should be supplemented by research using other data sources which provide a richer clinical picture to determine reasons for longer lengths of stay. Information such as this would be useful in structuring private insurance systems to

most appropriately meet the needs of children and adolescents.

Children and adolescents seem to use psychiatric services differently than adults. Thus, changes in psychiatric coverage such as day limits, types of services covered or cost sharing, and other changes, such as the introduction of case management techniques or the prospective payment of providers, should focus on how these measures affect the use of services by these younger age groups.

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An Analysis of Medicaid Coverage Policies Affecting Access to Children's Mental Health Services

Introduction

A 1986 report on children's mental health services issued by the congressional Office of Technology Assessment (OTA) estimated that, in 1980 in the United States, there were 7.5 million emotionally disturbed children, about 40 percent of whom were "seriously" disturbed. Of these 7.5 million children, only 2 million received outpatient mental health services; an additional 100,000 were admitted to hospital inpatient or other residential facilities for treatment. The conclusion from the OTA study, therefore, was that over two-thirds of the children in need of mental health services failed to receive them.

The reasons for this failure are numerous and complex, but certainly they include the inadequacy of financing for required services. Among children from low-income families, Medicaid is the primary source of health care financing. While OTA could provide no data on how many of the 7.5 million mentally disturbed children were Medicaid recipients, it did report that, although the program served a total of 11 million children in 1985, the amount of mental health services furnished to Medicaid-eligible children "is believed to be minimal."

This paper presents the findings of our study of Medicaid coverage policies for mental health services essential to the care of emotionally disturbed children and adolescents. Given the importance of treating this population in the most appropriate and least restrictive setting, our analysis focused on non-institutional care and community-based interventions. Specifically, we examined Medicaid coverage of the following services: hospital outpatient services; clinic services; physicians' services; other practitioner services, such as those of psychologists and psychiatric social workers; case management

services; Early and Periodic Screening, Diagnosis, and Treatment (EPSDT); and 2176 home- and community-based waivers.¹

Of these seven Medicaid services, only three—hospital outpatient services, physicians' services, and EPSDT—must be provided by all states according to federal law. The others are optional and may be provided by states at their own discretion.

For both mandatory and optional services, however, states have substantial discretionary authority in setting their coverage policies. States are free within broad federal guidelines to determine the exact amount, duration, and scope of any service that they cover. They may place restrictions on the number of visits, number of days, length of time, and exact type of service for which reimbursement will be provided.

The purpose of our study was not only to ascertain whether basic mental health services are being covered under states' Medicaid plans, but to analyze the depth of the mental health benefit provided. An examination of provider reimbursement rates and the actual availability of services—factors which also greatly affect children's access to mental health services—was beyond the scope of our study.

Methods

Data for this study were collected through interviews with state Medicaid agency staff during January 1987. Summaries of the data in table form then were mailed to each of the Medicaid directors for their review and comment and were modified accordingly.

The data were analyzed to determine coverage patterns for specific mental health services and also to determine mental health coverage patterns within each state. In addition, we categorized the states according to certain criteria regarding the adequacy of their Medicaid benefits for children's mental health services.²

Results

Not surprisingly, the basic finding of our analysis was that as mental health services become less medically oriented, they are more likely to be poorly covered or not to be covered at all. Hospital outpatient services and physicians' services, both of which are mandatory, are the best covered. EPSDT, also a mandatory service, tends to be concerned more with the identification and treatment of physical problems than with mental health problems. Among the optional Medicaid benefits, mental health clinic services are fairly well covered. The services of other practitioners, however—in particular, psychologists and social workers—usually are severely restricted, if they are covered at all. Case management services are provided in only a very few states. Home- and community-based waivers for severely emotionally disturbed children are provided in only one.

We found also that states often set separate, stricter coverage policies for mental health services that are furnished under a general health benefit category, suggesting a clear intent to restrict access to these therapeutic treatment services. Fourteen states, for example, provide a fewer number of psychiatric visits than other physician visits, 18 cover fewer visits to a mental health clinic than to other types of clinics, and 12 specify fewer outpatient hospital visits for mental health treatment purposes than for other health purposes.

Yet, while Medicaid-eligible children with emotional problems may not be covered adequately for the interventions that they require, privately insured children often fare even worse. Of the 140 employers that we surveyed during the summer of 1987 regarding their health benefit plans, 92 percent provided mental health coverage, but nearly half limited the number of therapy sessions to 52 or fewer per year and a quarter capped annual payments for mental health benefits at approximately \$2,000. Even more significant, half of the employer plans contained coinsurance

requirements of 50 percent for all mental health benefits. Similar coinsurance findings were reported by the Department of Labor, which also notes that a family's out-of-pocket liability for mental health benefits frequently is not subject to the usual annual limit, the stop-loss provision.

Hospital Outpatient Services

Hospital outpatient services refer to any preventive, diagnostic, therapeutic, rehabilitative, or palliative services or items furnished to an outpatient in a certified hospital by or under the supervision of a physician or dentist. They include outpatient psychiatric visits, within the limits established by the state, and also may include psychiatric day treatment or partial hospitalization. Hospital outpatient departments can provide emotionally disturbed children diagnostic and evaluation services, emergency services, and ongoing treatment—often the same services they might receive as a hospital inpatient, but without the 24-hour-a-day confinement.

All states provide some hospital outpatient services, since these services are a federally mandated Medicaid benefit. Thirty states place no limits on any type of general acute care hospital visits. Among the remaining states, the majority place some form of dollar or visit limit on all outpatient services, but others specifically restrict outpatient mental health services. The limit might be set at \$500 annually for all hospital outpatient psychiatric services or at 60 visits per lifetime for all mental health services provided in any setting.

In addition, 30 states offer Medicaid coverage for outpatient visits in psychiatric hospitals. Nearly two-thirds of these states do not apply any limits.

Partial hospitalization in either type of facility is also important for emotionally disturbed children and adolescents, allowing them to spend longer amounts of time (usually 4 hours per day) in the treatment setting. Nineteen states cover partial hospitalization in general acute care hospitals, and 16 cover partial hospitalization in psychiatric hospitals as well, most with no day limits.

Clinic Services

Clinic services are any preventive, diagnostic, therapeutic, rehabilitative, or palliative items or services furnished to an outpatient by or under the direction of a physician or dentist in a facility that is not a hospital but is organized and operated to provide medical care to outpatients. They may include services furnished by community-based facilities that provide treatment for mental health problems. Thus, emotionally disturbed children can obtain the same wide range of mental health services that might be available to them as hospital outpatients, but in a less institutionalized and perhaps more convenient and comfortable atmosphere.

Clinic services are an optional benefit, yet all but three states—Alaska, Illinois, and Texas—offer them in some form. Nine states cover services delivered in community mental health centers only; the rest cover any free-standing mental health clinic facility. Nearly half of the states, however, place limits on the number of visits or dollars spent for clinic services. As already mentioned, 18 states cover fewer visits to mental health clinics than to other types of clinics; among these are the handful that restrict all mental health services combined.

Twenty-six states cover partial hospitalization or day treatment in mental health clinics. Eleven of the states are included among the nineteen that provide partial hospitalization in hospitals. There are 16 states remaining that do not cover partial hospitalization in either type of facility.

Physicians' Services

Physicians' services are defined to include any service provided within the scope of the profession or under the personal supervision of a licensed physician. Services provided under a psychiatrist's supervision may include, for example, those of a psychiatric nurse, a psychologist, or a psychiatric social worker. Coverage of these services does not require a private office arrangement, although it is necessary that the physician be on the premises while the service is being provided. This benefit is

essential for emotionally disturbed children who require a regular schedule of visits to a psychiatrist or a physician-supervised practitioner who practices in an office that is not based in a hospital or clinic facility.

Thirty-six states place no limits on psychiatrists' visits, although nearly a third require prior authorization. Fourteen have strict dollar or visit restrictions on either physicians' services in general or mental health practitioners in particular.

Other Practitioners' Services

This Medicaid benefit category encompasses any medical or remedial care or services, other than those of a physician, that are provided by licensed practitioners within the scope of practice defined under state law. Psychologists and psychiatric social workers in independent practice, therefore, may be covered in states that license them. The benefit affords children the opportunity to obtain psychological and social worker services not only in a hospital or clinic setting, but also in the practitioners' office or, on a regular or emergency basis, in the child's own home.

Although psychologists are licensed in all 50 states plus Washington, D.C., and social workers in 36, only 22 states cover visits to a psychologist and only 3 cover visits to a psychiatric social worker. Moreover, the vast majority of these states apply severe coverage restrictions. Several states include these practitioners in limits set for clinics, psychiatrists, or "all mental health services combined." One state covers psychologists' visits for testing purposes only.

Case Management

Case management services are defined as services that will assist eligible individuals in gaining access to needed medical, social, educational, and other services. Since the problems of an emotionally disturbed child or adolescent rarely are confined to one aspect of life, case management is very important in assuring that all needed treatment and service interventions are provided.

The case management option has only been available under the Medicaid program since April 1986, and, at the time of our study, only two states had received approval to implement this service for an emotionally disturbed child population. Georgia's efforts were targeted narrowly to only the most severely emotionally disturbed children and adolescents, while West Virginia was launching a project to serve a much broader mix of children with emotional problems. Six other states were in various stages of developing case management services when our data were collected.

Early and Periodic Screening, Diagnosis, and Treatment

Early and Periodic Screening, Diagnosis, and Treatment (EPSDT) is a mandatory Medicaid service that offers the potential to identify and treat emotionally disturbed children in ways that would not be possible under a state's regular Medicaid program. The purpose of EPSDT is to provide screening and diagnostic services to determine physical or mental defects, and to furnish health care treatment and other measures to correct or ameliorate any defects or chronic conditions discovered. States are permitted to pay for any diagnostic or treatment service found medically necessary as a result of a screening examination, even if these services are not offered to Medicaid recipients not enrolled in EPSDT or are offered to them only in a lesser amount, duration, or scope. States may, in fact, cover treatments for diseases or conditions that were not initially identified through a scheduled screening examination, as long as the examination indicated a need for subsequent diagnosis and monitoring. Thus, the EPSDT program, theoretically at least, could provide the early identification and intervention services needed for the effective treatment of emotionally disturbed children—financing services that they might otherwise not be able to obtain.

In reality, however, the EPSDT program falls far short of the ideal. Of the 49 states that normally impose limits on at least 1 mental health service, only 19 provide for expanded coverage through EPSDT. Children in the other 30 states cannot receive any more services than they would if they were not participating in EPSDT. In addition, only seven states even require screening for psychological and psychiatric problems. Five include a mental health component in the checklist of questions that screening providers are expected to ask during intake (the questions may or may not be appropriate for adolescents), one has a pilot project designed to elicit information about abuse and neglect, and the last simply directs screening providers to include an assessment of the child's emotional health. Any but the most obvious mental health problems easily may be overlooked by screening providers in all the other states.

Home- and Community-Based Waivers

At the time of our interviews, only one state had received a 2176 home- and community-based services waiver to serve severely emotionally disturbed children and adolescents. This state's apparent success with its waiver appears to merit its experimental use in other states as well, but many states may find that, although they cannot liberalize income eligibility criteria without securing waiver approval, they may be able to offer most, if not all, of the same services.

Regular and model home- and community-based waivers enable states to finance a wide array of noninstitutional services for a specified target group of individuals—the category of mentally ill children and adolescents is one—who otherwise would require costly institutionalization. Regular and model waivers differ in the number of people they may serve and in the income criteria they must waive, but, regardless of the type of waiver, a state may elect to provide emotionally disturbed participants regular Medicaid services not authorized under the state plan as well as other benefits not allowed under Medicaid law. For severely

emotionally disturbed children and adolescents, such services could include partial hospitalization services, psychosocial rehabilitation services, clinic services, optional case management services, and, if specifically approved by the secretary, mental health services delivered in residential treatment facilities.

Vermont was the only state using this type of waiver at the time we collected our data. According to its administrators in the Vermont Department of Mental Health, the waiver has afforded a reduction in child and adolescent admissions, from more than 100 in 1981 to fewer than 20 in 1984. As a result of the program, Medicaid program costs in 1986 were approximately \$15,300 per recipient, more than \$6,000 less than the \$21,600 that would have been spent without waiver approval.

Assessment of States Overall Mental Health Coverage Policies

No state provided its Medicaid recipients with a truly comprehensive benefit package for child and adolescent mental health services. A few stood out as better than most, however, and a few stood out as worse than most.

In our initial attempt to categorize states according to the adequacy of their mental health services benefits,³ we posed that a "consistently very good" state would provide at least two visits per week for hospital outpatient services, clinic services, psychiatrists' services, and psychologists' services; cover some partial hospitalization at either a hospital or clinic site; and also offer case management services. None of the states, however, could meet these criteria. For example, of the four that had a case management benefit for emotionally disturbed children and adolescents federally approved or pending in their state legislatures, Georgia limited all outpatient departments services combined to only 12 per year and failed to cover psychologists' visits; Ohio limited outpatient hospital visits, clinic visits, and psychologists' visits each to 4 per month; Vermont placed a \$500 per year maximum on all mental health practitioners

combined; and West Virginia did not cover any psychologists' services.

We subsequently defined a next-best category of states that offered "consistently good" mental health services to include those states that provided at least two visits per week to a hospital outpatient department, a free-standing clinic, a psychiatrist, and a psychologist, and covered partial hospitalizations. Five states—Colorado, Maine, Nebraska, New York, and South Dakota—were able to meet this standard.

We referred to our middle-range category of states as having a "minimally adequate" package of mental health benefits. This group included states that provided at least two mental health visits per week at either a hospital outpatient or clinic setting and did not necessarily offer any other mental health benefits. We assumed, though, that psychiatrists' and psychologists' services would be reimbursed at these sites. The vast majority of the states (38) fell into this category, although many provided both hospital outpatient and clinic services. In fact, most covered weekly visits to psychiatrists, most offered partial hospitalization, and some provided psychologists' services; none, however, reimbursed all three.

We placed the remaining seven states that could not meet the standard of minimal adequacy in the "poor" category. Five of these states—Hawaii, Idaho, Mississippi, New Mexico, and Virginia—placed dollar maximums (usually \$450) or number-of-visit limits (ranging from 48 per year to 60 per lifetime) on all mental health services combined. New Hampshire limited all hospital outpatient mental health visits to 12 per year and capped clinic services at \$1,000, and Ohio limited both hospital outpatient and clinic mental health services to just 4 per month.

Conclusions

Our study found that in all but a handful of states, Medicaid coverage of mental health services for children and adolescents is either "poor" or meets a "minimum standard of adequacy." No state provides benefits for all or even most of the services essential to the community-based care of severely disturbed children and adolescents. Services that are not medically based are especially likely to be unavailable or severely restricted.

We did determine, however, that Medicaid recipients overall are better off than most of the privately insured and, where their coverage for a specific Medicaid mental health service is inadequate, other benefit categories sometimes may be available to provide reimbursement. In a state that does not cover other practitioners' services, for example, a psychologist working in a clinic, hospital outpatient department, or psychiatrist's office still may be reimbursed for services furnished to Medicaid-eligible children.

Nevertheless, it is clear that most states need to focus on expanding their coverage of mental health services for Medicaid children and adolescents. They may do this in three different ways. First, they may simply provide more extensive mental health care benefits across the board, covering services they omitted previously and loosening restrictions on those already provided. Second, they may enlarge only their EPSDT programs, requiring screening providers to assess the mental health of patients and then authorizing additional treatment services for those found to need them. Third, states may obtain a 2176 home- and community-based waiver to serve severely emotionally disturbed children, providing them with various services that otherwise would not be available to Medicaid recipients. Any of these options will cost states money, but improvements in mental health services financing for children are badly needed, and states may find that additional Medicaid expenditures can be offset by

budget reductions in mental health and other programs supported by state funds only.

Endnotes

1. We did not examine coverage policies under the rehabilitative services benefit category because we had been told that it was not appropriate for children's services. Since the study was conducted, however, we have learned that this benefit category can indeed be used to reimburse mental health services to children, at least to older children, and we would recommend that any future study of Medicaid financing for children's mental health services include the rehabilitative services option.
2. Arizona, however, is excluded from the discussions. The entire Medicaid program in Arizona operates under a Health Care Finance Administration demonstration program waiver. All of the state's Medicaid recipients are enrolled in Health Maintenance Organizations that are free to determine the extent of Medicaid coverage. Since Arizona's benefit levels cannot be compared to those of other states, information in the text is for a total of only 49 states plus the District of Columbia.
3. This categorization had to be based on data pertaining to mental health benefit levels alone. Ideally, we would have wanted to include information on provider reimbursement rates, since the adequacy of these rates also affect access to appropriate care. Unfortunately, however, obtaining data on reimbursement rates was beyond the scope of this study, as stated earlier.

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National Special Education Programs as a Vehicle for Financing Mental Health Services for Children and Youth

Introduction

This paper sets out to describe public school programs and policies that contribute to the financing of mental health services for children and youth. It begins with some general remarks concerning school children as a target population for mental health services, then describes the role of recent special education laws in defining mental health benefits for children with special needs. Subsequent sections review existing data on the actual scope of mental health care currently paid for in special education programs and reflect on whether this pattern is likely to continue in the future.

The Target Population in the Schools

It often has been maintained that the schools represent an appealing site for children's service delivery simply because so many youngsters between the ages of 5 and 18 can be found there. This truism applies no less to mental health than to other services, although it must be remembered that (a) access to children below school age and their families may not be any easier via schools than via other service agencies; and (b) access to older adolescents at risk of mental health problems or already manifesting such problems is not easy because so many of these adolescents are chronically absent or drop out, especially when they live in major metropolitan areas.

In principle, services of three types can be provided via the schools, corresponding to the public health concepts of primary, secondary, and tertiary prevention. Primary prevention is aimed at the entire school population, usually in the form of pedagogy or special programs designed to

avert the onset of problem attitudes, habits, or behaviors. Secondary prevention usually means screening or other means of identifying a high-risk subpopulation of students warranting specialized attention. Tertiary prevention is, in essence, rehabilitation. The intent is to restore functioning and mitigate secondary disability among those with demonstrated mental health problems.

Over the years, schools actually have spent a fair amount of money, though seldom from core budgets, on preventive activities of the first and second types. A recent search of the Educational Resources Information Center (ERIC) files for the years 1970 to 1987 reveals at least 35 program descriptions for these kinds of school-based mental health activities. Included are model interventions such as systemwide mental health consultation with groups of teachers, parent training activities, high-risk youth initiatives, peer counseling programs, suicide awareness training, interpersonal problem-solving training, schoolwide mental health development programs (e.g., James Comer's in New Haven), and so forth. These programs usually have been demonstrations funded for finite periods. They seldom have been well evaluated, but, nonetheless, are generally assumed to have a positive impact. Such efforts represent an important component of mental health activity in the schools, but one for which it would be difficult to estimate nationwide expenditures.

More visible as a public school commitment have been programs for children with diagnosed mental health problems, prominently but not exclusively youngsters in special education programs (approximately 11 percent of the U.S. public school population) and particularly those designated as "severely emotionally disturbed" (somewhat fewer than 1 percent nationally). Most of this paper is devoted to a discussion of services for these subpopulations. It is important to recognize at the outset, however, that the subpopulation of children receiving some form of mental health service is not identical with the special education population, even though one group overlaps the other. It has been estimated that some 5 percent of all children receive at least some outpatient mental

health care each year (Dougherty, Saxe, Cross, and Silverman 1987). This proportion, while it is a good deal smaller than the percentage of children estimated to need such services, nonetheless is significantly larger than the proportion receiving mental health services via special education programs. It also is important to remember that, within the special education population, three subgroups can be distinguished: those with a primary diagnosis of emotional disturbance; those with another primary diagnosis (e.g., mental retardation) but emotional disturbance or need for psychotherapy as a secondary concern; and those with a disability but no accompanying psychological difficulty. A fourth group to keep in mind is those who are chronically ill but have no "educational handicap," and hence, are not eligible for special education even though they have medical needs which may put them at risk for mental health problems. An example might be the child with renal disease but no accompanying cognitive deficit.

The National Special Education Laws

The most significant piece of federal legislation affecting provision of mental health services in special education programs is the Education for All Handicapped Children Act (EHA, or P.L. 94-142). This section of the paper will focus primarily on EHA. Two additional federal laws also should be mentioned: P.L. 89-313, which pays for residential care of a limited number of severely disturbed youngsters (usually with accompanying severe mental retardation or neurological problems, and the 1986 amendments to EHA (P.L. 99-457), which provide 3-year state incentive grants to create comprehensive systems of early intervention and preschooling for handicapped children. More will be said below about P.L. 99-457.

EHA was first implemented in 1977-78 and has been heralded as a revolutionary new

entitlement. It requires the states to (1) identify all handicapped children of school age (5-18 years) and offer them free appropriate educational services; (2) assess each handicapped child individually and formulate a written individualized education program (IEP); (3) ensure that handicapped students are placed in the least restrictive environment commensurate with their needs; (4) notify parents in writing about identification, evaluation, and school placement of their child and establish grievance procedures for parents wishing to contest a district decision; and (5) provide those related services required for children to be able to benefit from special education.

Definitions Under EHA

The obligation of the schools to pay for mental health services, as a matter of legal discussion, depends on the interpretation of various definitions contained in the statute and accompanying regulations.

Handicapped children, as defined by EHA, include the mentally retarded, hard of hearing, deaf, speech-impaired, visually handicapped, seriously emotionally disturbed, orthopedically impaired or other health impaired, or children with specific learning disabilities who therefore require special education and related services. [United States Code (U.S.C.) 1401(1)]

Special education is specially designed instruction, at no cost to parents or guardians, to meet the unique needs of a handicapped child, including classroom instruction, instruction in physical education, home instruction, and instruction in hospitals and institutions. [U.S.C. 1401(16)]

If placement in a public or private residential program is necessary to provide special education and related services to a handicapped child, the program, including nonmedical care and room and board, must be at no cost to the parents of the

child. [Code of Federal Regulations (C.F.R.) 121a.302]

Related services include transportation, and such developmental corrective and other supportive services (including speech pathology and audiology, psychological services, physical and occupational therapy, recreation, and medical and counseling services, except that medical services shall be for diagnostic and evaluation purposes only) as may be required to assist a handicapped child to benefit from special education, including the early identification and assessment of handicapping conditions in children. [U.S.C. 1401(17)]

Related services include school health services (i.e., services provided by a nurse or other qualified person). [34 C.F.R. 300.13(b)(10)]

Psychological services include administering psychological and educational tests and other assessment procedures; interpreting assessment results; obtaining, integrating, and interpreting information about child behavior and conditions related to learning; consulting with staff members and planning school programs as indicated by psychological tests, interviews, and behavior evaluations; and planning and managing a program of psychological services, including psychological counseling for children and parents. [34 C.F.R. 300(13)(8)]

Psychological services may be provided by persons from varying professional backgrounds with a variety of operational titles depending upon requirements by individual states. [Comment on 34 C.F.R. 300]

Excluded from related services are those health-related activities which must be performed by a licensed physician and not provided to determine a child's medically related handicapping condition which results in the child's need for special education and related services. [625 F.2d at 563]

Psychiatrists, in contradistinction to psychologists, counselors, and other providers of psychological services, are licensed physicians whose services are appropriately designated as medical treatment. [34 C.F.R. 300(14)(4)]

Mental Health Services Under the Law

What constitute required or permissible mental health services under the law? One type of mental health care the schools clearly are required to pay for, even though it need not be (and seldom is) provided by mental health professionals, is educational instruction for severely emotionally disturbed children. Whether in regular classrooms, special classrooms, or completely separate settings, instructional services must be provided by every school district in the country.

All of the remaining forms of mental health care fall under two general rubrics: related services, or services provided as part of a total residential program in a full-time placement. The former may include psychological services as defined above, child and family counseling, and psychiatric diagnosis. The latter are more difficult to disaggregate from a total program of care, a matter to which we will return below in reviewing federal court decisions.

Although EHA designates the state education agency as responsible for ensuring that free and appropriate services are received, it does not make the state education agency solely liable financially for all services nor preclude financial participation by other agencies. Therein lies the source of a contentious debate in many school districts. Which services should the schools pay for and which should be supported by parents, private insurance companies, or alternative public funding sources such as the mental health agency or Medicaid? Patterns of payment and legal decisions in reference to cost sharing also are reviewed below.

Deciding what constitutes the schools' obligation to pay for mental health benefits is additionally complex because, in many instances, conforming state legislation differs somewhat from the federal legislation (e.g., in some states, physicians must be involved more extensively than the federal regulations specify).

Patterns of Service Delivery and Financing Under EHA

In the 1985-86 school year, 376,000 U.S. children were classified as severely emotionally disturbed (SED) (U.S. Office of Special Education and Rehabilitative Services 1987). Under EHA, the population in this category grew more than 30 percent between 1978 and 1985. Despite its rapid growth, SED is not one of the larger service categories under EHA. It includes fewer than 9 percent of special education students nationally.

The percentage of children classified as SED continues to vary widely across states and school districts as a function of fiscal incentives, agency definitions, availability of services, and a host of other factors unrelated to etiology or psychiatric diagnosis. Data from the 1983-84 school year show that 7 states classified more than 15 percent of special education students as SED, while 7 others classified fewer than 3 percent. This inconsistency within a program supposedly based on common definitions illustrates that, as a practical matter, local and state policies concerning the ED classification differ widely. "Primary" diagnosis remains an elusive concept especially because of the frequent coexistence of a learning disability, speech impairment, or mental impairment, any one of which might permit another primary classification.

Additional information on patterns of service to SED children is available from the Collaborative Study of Children with Special Needs (Singer and Butler 1987). This study collected information in spring 1983 on stratified samples of elementary school students from the special education programs of five major metropolitan school systems (Charlotte, NC; Houston, TX; Milwaukee, WI; Rochester, NY; and Santa Clara County, CA). Data highlights include the following:

1. SED children in the sample were at greater socioeconomic risk than other categories of handicapped students. Almost 50 percent

had mothers who never graduated from high school, more than 75 percent were from poor or near-poor families, and only 21 percent were from families with two natural parents (the average for the entire sample on this variable was 45 percent).

2. Only about 15 percent of SED children were taught in regular classrooms. Along with the mentally retarded, SED children were the special education students most likely to be found in a special class or special school.
3. Two-thirds of special SED classes and all special schools employed aides as well as teachers to assist with the children. Approximately half of special classes and schools also used parent volunteers.
4. Contrary to expectation, only 61 percent of SED children had received child counseling via the schools in the previous year, and only 26 percent had received family counseling. Among those receiving child counseling, one-third had experienced fewer than five counseling sessions. Site differences, however, were large. In one site, fewer than 50 percent of SED children had received counseling and only 20 percent had experienced five or more visits; in another site, 86 percent had received counseling and 73 percent had experienced five or more visits.
5. Average per pupil expenditure for SED children (in 1983 dollars), based on data from Charlotte, Milwaukee, and Rochester, was \$7,900. This was less expensive than the average for hearing-impaired and physically or multiply handicapped youngsters (\$9,300 and \$10,500, respectively), but more expensive than the average for the speech impaired (\$5,200), the learning disabled (\$6,500) and the mentally retarded (\$7,200). The overall average per pupil expenditure (PPE) for all special education students was approximately twice that of non-handicapped students.
6. The standard deviation of PPE for students classified as severely emotionally disturbed was \$2,267. This statistic reflects wide variation in expenditure, especially between districts. Variation in PPE was greater, however, for the learning disabled, hearing impaired, and physically or multiply handicapped than for SED students.
7. Related services accounted for only 7 percent of the PPE for severely emotionally disturbed students. This was the smallest percentage for any group except LD students. By contrast, 25 percent of PPE for physically handicapped students was used for related services.
8. Parent interviews revealed substantial lack of parent understanding of legal entitlement under EHA and lack of participation in the IEP process in four of the five school districts studied. Parents of SED students also ended up paying out of pocket for significant components of health care and other services. For a fuller elaboration of these issues, see (1) the statement of problems jointly prepared by various national organizations concerned with care for SED children (1987); (2) the list of issues identified by parents in *Financing of Health Care for Children with Disabilities and Chronic Illnesses* (Federation for Children with Special Needs 1987); and (3) the Preliminary Findings of a Symposium on EHA and Services to the Severely Emotionally Disturbed convened by the National Mental Health Association (1986).
9. Interviews with key informants among school district administrators revealed a persisting lack of sufficient teachers and other personnel to work with SED

children, a problem that had been exacerbated by the tendency to redeploy psychologists and social workers away from child and family therapy into diagnosis and administration of IEP preparation. Hence, total dollars per child spent on therapeutic interactions in regular school settings may actually have declined somewhat since 1980.

These data suggest that educational programs for SED students are dealing with a particularly high-risk group, are middling in expense as compared to programs for other disability groups, and, from the standpoint of parents and teachers, continue to have insufficient resources. Low levels of related service, especially counseling, apparently are a relatively effective means of controlling costs. Making some gross assumptions, we can derive an overall national cost estimate by multiplying the average PPE found by the Collaborative Study of Children with Special Health Needs in three districts in 1983, adjusted for inflation, by the total number of SED students served in 1985-86. The bottom line is somewhere in the neighborhood of \$3 billion per year spent on SED students nationally by the schools.

It is important to recognize that, just as our research showed that not all SED children received counseling services, it also showed that not all counseling was for SED students. One-quarter to one-third of children in every other disability category received at least some counseling. These services generally were provided by school psychologists, social workers, or guidance personnel rather than professionals in the mental health system.

Cost Sharing Controversies

Although EHA is a federal law, state and local tax dollars contribute by far the largest component of per pupil expenditure. The federal contribution to "excess cost" (the amount that a special student costs above what a regular student would) never has exceeded 12 percent. This means that the stakes for local and state school districts are rather high.

Most aspects of the schools' obligation to serve SED students remain unambiguous under the law. If a child is referred to special education and found by an IEP committee to be severely emotionally disturbed, he or she is entitled to all of the same procedural guarantees as any other handicapped student. The recent Supreme Court decision in *Honig v. Doe* underscored that public schools may not expel or remove even the most disruptive emotionally disturbed students from public school classrooms for more than 10 days without permission of the parents or a judge.

State courts also have spearheaded reforms to ensure that SED students receive educational services to which they are entitled. One prominent example of this phenomenon is the North Carolina Supreme Court case, *Willie M. v. Hunt*, a class action lawsuit brought on behalf of an 11-year-old unable to secure appropriate educational services and treatment. Willie M. had been diagnosed as SED and mentally retarded, and had been in and out of foster care, psychiatric hospitals, training schools, mental health centers, and special education programs. In school he was disruptive, aggressive, loud, and immature. The court found in the plaintiff's favor—that he had been denied appropriate care—and, in 1980, after extensive negotiation, state education and mental health authorities agreed to identify, evaluate, and provide treatment for all children in the Willie M. class. The state was required as part of the decision to develop a continuum of care permitting children to move from more separate to more integrated, community-based, and unrestrictive settings.

Payment for Residential Care

Despite federal and state resolve to give SED students the services to which they are entitled, it has remained unclear precisely what is meant by "appropriate" educational and related services for SED youngsters, and what is the scope of the schools' financial responsibility to pay for services that are not strictly instructional. In general, the schools have been willing to support a range of special class arrangements and specialized day treatment programs, sometimes involving innovative mixes of personnel with specialized training. They have resisted paying for extensive psychotherapy, however, and at times also have contested their obligation to pay for residential placements in psychiatric hospitals or other full-time care facilities.

The following chronology of relevant federal court cases gives some sense of the debate surrounding interpretation of EHA with respect to psychiatric hospitalization. It would be far too difficult in a brief paper to summarize parallel state court actions, many of which depend on the provisions of state special education laws that conform with, but are not identical to, EHA.

1981: *Kruelle v. New Castle County School District*. In this case, the Third Circuit Court of Appeals upheld a lower court decision that a 6-hour day program was an inappropriate placement for an SED child and that the child required full-time residential placement. Moreover, the school district was required to pay in full for the residential care. As the court reasoned, "Analysis must focus on whether full-time placement may be considered necessary for educational purposes, or whether the residential placement is a response to medical, social, or emotional problems that are segregable from the learning process." It concluded that medical and educational needs were in this case inextricable.

1981: *Papacoda v. State of Connecticut*. The U.S. District Court in Connecticut ruled that, contrary to a school department hearing officer's decision,

the schools were obligated to pay the full cost for an SED student to attend a private school, including fees for room and board, through her graduation. The court rejected the argument that the student's placement was primarily for non-educational reasons and that the state was not responsible for medical treatment or psychotherapy expenses.

1982: *Christopher T. and Douglas M. v. San Francisco Unified School District*. The U.S. District Court of Northern California upheld a state hearing officer's ruling that two emotionally disturbed children should be placed, without cost to their parents, in an appropriate residential care setting. The court found it "indisputable" that residential care was, in this case, a related service under EHA.

1983: *Hawaii Department of Education v. Katherine D.* The Ninth Circuit Court of Appeals offered a mixed decision, disagreeing with the lower court that placement during 1979-80 in a regular school setting with nursing care had been inappropriate or warranted removal to a more restrictive setting, but agreeing with the lower court that the Department of Education decision to place the student in a home-bound program the following year had been inappropriate ("Katherine was clearly capable of participating in regular classes with nonhandicapped children"). Retrospective payment of parents for private placement also was denied.

1983: *McKenzie v. Jefferson*. The U.S. District Court of the District of Columbia held that a student's psychiatric hospitalization was not a related service as part of her special education program, and that the school system therefore was not required to pay for it. Placement in a hospital was seen to be for medical and not educational reasons, and medical services were not solely for diagnosis and evaluation.

1983: *Darlene L. v. Illinois State Board of Education*. The U.S. District Court of Northern Illinois upheld a Board of Education ruling to deny placement in a psychiatric hospital to a student with a severe behavioral disorder. It was argued that psychiatric services rendered by a licensed

physician were excluded from related services that states must provide under EHA, and that the Rehabilitation Act did not impose any greater obligation on the states than EHA.

1984: *Irving Independent School District v. Tatro*. In a U.S. Supreme Court decision of only indirect relevance, it was held that clean intermittent catheterization was a "related service" under the law and not a "medical service." The Court reaffirmed that "Congress plainly required schools to hire various specially trained personnel to help handicapped children, such as trained occupational therapists, speech therapists, psychologists, social workers, and other appropriately trained personnel." [104 Appeals Court (A.Ct.) 3371]

1985: *Parks v. Pavkovic*. The Seventh Circuit Court of Appeals upheld a lower court ruling that the state education agency had violated EHA by requiring that parents pay part of the living expenses of a mentally ill and autistic child in a private facility. The court also ordered partial retrospective reimbursement of parents for past expenses. This case was decided subsequent to the *Darlene L. v. Illinois State Board of Education* case, in the same circuit.

1987: *Doe v. Anrig*. The U.S. District Court of Appeals for Massachusetts upheld a school department hearing officer's decisions that an SED student required psychiatric hospitalization, but that McLean Hospital could not be reimbursed for room and board because it was not a state-certified special education facility. The court further ruled that psychotherapy and group therapy were required to assist Timothy to benefit from special education and, therefore, were related services under EHA for which the school system was required to pay.

1987: *Clovis Unified School District v. Honig*. In a significant case pending before the Ninth Circuit Court of Appeals, a district court decision is being reviewed which held that the Clovis United School District is obligated to provide both residential placement and related services to an SED student at Kings View Hospital. The brief for the plaintiff argues that (a) supportive services are related services under EHA, (b) the services needed are

related services within the meaning of EHA, (c) Kings View provides these services, (d) related services do not become excluded medical services when they are provided in a psychiatric hospital, (e) residential placement in a psychiatric hospital is not precluded under EHA, (f) if these services are denied, the client will be denied an appropriate education, and (g) a child may not be denied an appropriate education merely because the only appropriate placement is costly. It remains to be seen whether these arguments will be accepted by the appellate court.

In the absence of a directly relevant Supreme Court ruling, there remains room to maneuver for those who would resist having the schools pay the full bill for residential placement in psychiatric hospitals. But, as can be seen from these recent federal court decisions, EHA has been interpreted more often than not as requiring that the schools pay for hospitalization when such care is found to be the only appropriate alternative. (For a spirited rebuttal of this presumption, see Wenkart 1987.)

Interagency Cost Sharing

In most states, cost-sharing arrangements between public agency sectors—mental health authorities, the Medicaid program, social service agencies, juvenile justice, and the schools—have evolved in response to the most severe cases. Cost sharing, however, remains a controversial matter.

One problem encountered early in the implementation of EHA was that mental health authorities, interpreting the regulations of the new special education law, assumed that the public schools henceforth would provide all needed mental health services for children and adolescents up to age 21. Based on this understanding, they often turned their attention, and their resources, toward services for chronically mentally ill adults, deinstitutionalization of patients in state hospitals, and other priorities (Scallet 1986). Ironically, EHA has

provided an excuse for reducing rather than increasing mental health service to children.

Another major problem is that private insurance companies often have adopted exclusionary clauses stating that they will not pay for services that already are available free of charge. The companies argue that this provision should include health-related services in a school system (U.S. General Accounting Office 1986).

Until recently, if services have been covered by EHA, regardless of whether other public agencies also have some purview, the federal courts generally have required that the schools pay. Thus, for example, in the Kruelle case, which involved a developmentally disabled youngster, the Third Circuit Court of Appeals argued that

Determination that Paul's needs are covered by the Education Act renders unnecessary any decision whether they might also—perhaps even more comprehensively—be accommodated under the Developmental Disabilities Act. The legislative history of the DDA indicates that it was intended to supplement, not to supplant, the Education Act. [642 F.R. 2. 698]

The matter has not proven so clear, however, in the case of Medicaid. The First Circuit Court of Appeals recently ruled that Medicaid must pay for related and habilitative services for Medicaid-eligible mentally retarded students assigned by the schools to intermediate care facilities. This decision does not concern SED youngsters, but the analogy is clear. An appeal presently is being sought by the U.S. Department of Health and Human Services, which has taken the position that Medicaid funds should not be used to reimburse services contained in a child's IEP. The U.S. Office of Special Education and Rehabilitative Services (OSERS) concurs in this view: "To the extent that education and related services are provided in a handicapped child's IEP, we believe these costs should be the responsibility of the Education Agency and not Medicaid" (U.S. Office of Special Education and Rehabilitative Services 1986).

Medicaid regulations specify that payments to an ICF, and to facilities providing psychiatric inpatient care, may not be used for reimbursement of educational services. Medicaid defines "training and habilitative services," however, as the facilitation of the intellectual, sensorimotor, and affective development of the individual. For clients requiring specific additional services, Medicaid also reimburses for dental care, physical and occupational therapy, psychological services, social services, speech pathology and audiology, organized recreational activities, physician services, and case management. It often is difficult to distinguish between "training and habilitative services," so defined, and "educational or related services" under EHA. Another knotty issue is whether a service, if prescribed by school authorities, has the same status as if prescribed by a physician or other personnel within a Medicaid-authorized facility.

Special educators are watching closely the appeal of the First Circuit decision. The outcome may be influenced by the 1987 amendments to EHA (P.L. 99-457), which clarify congressional intent as follows:

In sum, Congress established a legal framework under which one agency is ultimately responsible (the educational agency) and multiple agencies are expected to pay for appropriate services (educational agencies as well as health, welfare, and other social service agencies).

Congress may further move to amend Title XIX to conform with Parts B and H of EHA.

An excellent summary of the boundary issues between Medicaid and EHA has been prepared by the National Association of State Directors of Special Education (NASDSE 1987).

Will Current Patterns of Financing Persist?

The previous sections permit several summary remarks with which most mental health professionals, from their vantage point outside the schools, probably would agree:

1. Not all children with mental health needs are in special education, and not all special education students with mental health needs are being served with reference to their psychological problems.
2. The group defined as SED is small, probably a good deal smaller than it might be if SED were not a relatively costly classification to serve. District variations in percentages served suggest that the SED designation, if not capricious, tends to be somewhat arbitrary.
3. Apart from instructional services, few mental health benefits to SED students are paid for and/or provided by the schools except in the case of a limited number of children in full-time hospital placements.
4. Mental health services for other disability groups are even smaller, usually in the form of limited counseling provided by school personnel who may have very limited expertise.
5. Marginal expenditure for SED children is not much higher than for the learning disabled, despite the presumably greater complexity and seriousness of the problems at issue.
6. Although various past and present court decisions have reaffirmed the schools' obligation to pay for care in a psychiatric hospital, if appropriate, none of these decisions is likely to enlarge dramatically the

schools' willingness to pay for mental health services, as distinguished from instructional (educational) services.

These assertions suggest a minimalist vision of what can be expected as a contribution of public education to child mental health therapy. It may be that to expect more from the schools simply is unrealistic. On the other hand, if one wishes to see the glass half full, especially in light of the fiscal problems of the schools and their limited mandate to deal with mental health problems in the first place, it is equally easy to cite data about the total number of children now served, the increase in this number, the aggregate national expenditure on SED children, the scope of counseling services provided, and selected legal precedents concerning payment for full-time hospital care to make the argument that the schools actually are doing a lot more than might be expected, and, under the right circumstances, might be induced to do more.

Under what conditions might the schools enlarge their role in paying for mental health services? At least one scenario is worth considering, although here it must be admitted that my analysis falls into the realm of informed speculation.

According to one line of reasoning, the implementation of P.L. 99-457 may enlarge the role of the schools in financing care. This is partly because more children are likely to be identified, at an earlier age, who are in need of mental health services. At present, the median age of SED students tends to be older than for most other groups of disabled students. If P.L. 99-457 has the effect of more aggressive case identification and earlier special education classification, the elementary schools may find themselves obligated to ensure that a wider number of students receive adequate mental health services. In addition, agreements on school contributions to cost sharing developed for preschool children may follow these youngsters as they move into and through the public schools.

The new Part H of EHA is quite explicit that, as part of implementing new statewide, comprehen-

sive and coordinated, interdisciplinary, interagency programs of early intervention for handicapped infants and toddlers and their families (all of these buzzwords actually are included in Part H), states are required to identify and coordinate the financial responsibilities of various agencies through interagency agreements. The legislation also specifies that there should be non-substitution of funds, prohibits reduction of other benefits, and states that the schools, with their Part H dollars, should be a payer of last resort. Further, the secretaries of education and human services are directed to carry out a study of all federal funding sources and services for early intervention programs. These efforts in themselves will not increase the schools' obligation or propensity to pay a larger share of the bill for mental health services, but the process may have the indirect effect of requiring that the schools adopt a more prominent leadership role in solving problems of joint funding.

In some states, the imperative for cost containment and better efficiency of service delivery already has prompted governors and legislatures to mandate coordination between SEAs and human service umbrella agencies. Florida is a good example in this regard, where state legislation in 1981 mandated a multiagency network for SED students (SED-NET: Florida Statutes, Section 230.2317). The legislation calls for substantial collaboration and shared funding between education and mental health authorities in the interest of creating an improved continuum of placements and services for SED youngsters.

As part of the statewide reform plan, agreements were made between the Education Department and the Human Resources Department to establish interagency committees in each of 13 service districts, staffed by mental health professionals but with at least one school system representative, to review all referrals for residential care among children with emotional problems whose treatment requires at least some element of public funding. These gatekeeping committees are referred to as Case Review Committees or Service Assessment Teams. Each has several case managers

whose job it is to stay in touch with individual children and families. Case managers obtain services, monitor progress, act as a general resource and advocate for the child and family, and control limited discretionary funds for purchase of supplemental services such as special counseling, tutoring, and crisis management.

Education and human services funding for eligible students is pooled at the district level. Because each district controls its own prospectively allocated resources, there is an incentive to place children at least cost, and it is easier therefore to discourage hospitalization. Also, local authorities find it easier to trace expenditures for individual children for purposes of auditing, quality control, and evaluation of cost-effectiveness.

The Florida model is not without its problems (e.g., high case loads and limited total dollars), but success has been considerable. Pooled funding has created a system in which 80 percent of SED children are treated in state and outside of long-term care facilities.

The main benefit of the Florida system is that monies from various agency sources are fungible to a significant degree in providing comprehensive services for individual children. This same local pattern of cost sharing for individual children can, in some measure, be expected as a consequence of P.L. 99-457. It is worth considering whether, in the coming decade, the goal of flexibility of funding across agencies and insurance sources may be more realistic than, and perhaps just as important as, the goal of increased dollar contributions from the various relevant service sectors.

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Diagnosis-Related Groups and Child Psychiatry: Determinants of Inpatient Resource Use Based on CHAMPUS Data

Background

Experts in the mental health field emphasize that the inpatient utilization pattern of children is different from the utilization pattern of the general population. Summary national level data published by the National Institute of Mental Health (Taube and Barrett 1985) support this opinion: Children stay longer, their hospitalization is more costly, and they are more likely to be treated in private psychiatric hospitals than the general population. Special attention needs to be paid to this different utilization pattern in any kind of prospective payment system to guarantee fair payment for the hospitals which treat children with alcohol, drug abuse, and mental health (ADM) diagnoses.

The purpose of the current study was to explore the implications of applying diagnosis-related groups (DRGs) to a large sample of children and adolescents admitted for inpatient psychiatric hospitalization within the Civilian Health and Medical Program for the Uniformed Services (CHAMPUS) program during calendar year 1985. In addition to psychiatric diagnosis, other variables available on the CHAMPUS claim data file were examined for their usefulness in developing a psychiatric patient classification system for children and adolescents.

Data Sources

A special effort is needed to develop data files which can be used for analyses pertinent to children. The psychiatric inpatient utilization rate of children is even lower than that of the general population; therefore, unless the children are oversampled in a national probability sample survey, we cannot get a sufficient number of cases for analysis from such sources (e.g., National Medical Care Expenditure Survey 1977, and National Medical Care Utilization and Expenditure Survey 1980). Data files generated by the Health Care Financing Administration (HCFA) provided information for several prospective payment system (PPS) related analyses. Unfortunately, analyses related to children form an exception; there were only 24 ADM cases under age 18 on the Federal Patient Billing File (PATBILL) in fiscal year 1984. One of the first files concerning children that has been analyzed in connection with the DRG system is coming from North Carolina and includes 1,500 admissions during a 4-year period in the state mental hospital system. These data were analyzed by Macro Systems, Inc. (Morrison 1984). Another file on children was generated at the UCLA Neuropsychiatric Institute (Essock-Vitale 1986). The CHAMPUS file has several advantages in comparison to these above files: it is a national data base and includes all but two provider types. These two exceptions are state mental hospitals and residential treatment centers. State mental hospitals are not reimbursed by CHAMPUS, and therefore are not represented on this file. Although CHAMPUS is one of the few insurance policies which reimburse residential treatment centers, these latter are not included on the file obtained from OCHAMPUS.

The CHAMPUS Children Analysis file is based on claims paid in 1985 and aggregated to the discharge level. About 7,000 discharges were identified representing inpatient treatment episodes characterized by a discharge occurring during 1985. These discharges include short and

intermediate stay patients. The CHAMPUS file is thus a rather large data file considering that, in the United States, about 82,000 children and adolescents are admitted annually to hospitals with ADM diagnoses (Mental Health Statistical Notes 1980).

Initially 18,052 claims were obtained from OCHAMPUS with ADM and alcohol-related diagnoses. These claims were aggregated into 7,538 discharges during 1985. Of these 431 cases with alcohol-related diagnoses were excluded and another 161 cases were excluded due to invalid data. After editing, 6,957 cases with ADM diagnoses were included in this analysis.

The current DRG system classifies hospital discharges into 23 major diagnostic categories (MDCs) according to the principal diagnosis of the patient. Psychiatric discharges fall into MDC 19 (mental disorders), which includes DRGs 424-432, and MDC 20 (substance abuse disorders), which contains DRGs 433-438.

A descriptive analysis of the approximately 7,000 discharges indicates that the sample contains children in all but 2 DRG categories (see table 1). This diverse diagnostic distribution of children among DRGs is consistent with the findings of the UCLA and Macro Systems studies. DRG 431 is the category for childhood mental disorders. Twenty-four percent of the CHAMPUS cases, 32 percent of the UCLA cases, and 50 percent of the North Carolina cases belonged to this category. There seems to be some disagreement among experts concerning the relevance of these statistics. The data can be interpreted as evidence of the dominance of DRG 431 for children. It also can be interpreted, however, as a residual category among the ADM DRGs.

This ambiguity is present in the DRG system in general. Currently, 50 DRGs are defined for pediatric cases only. The majority of the DRGs, including the psychiatric DRGs, group adult and pediatric patients together, as has been pointed out in a study conducted by Policy Analysis, Inc., for the National Association of Children's Hospitals and Related Institutions (NACHRI 1985). If either adults or children require more resource intensive treatment in a systematic way, however,

Table 1
Percent Distribution and Length of Stay
of Children and Adolescents by DRG¹

DRG		Percent of All Cases	Length of Stay		
			Mean	CV	Skewness
MDC 19					
424	OR procs w/principal dx mental illness	-	-	-	-
425	Acute adjust react and disturbs of psychosocial dysfunction	2.1	13.8	1.2	1.8
426	Depressive neuroses	24.2	26.5	1.1	3.5
427	Neuroses except depressive	6.9	24.0	1.0	2.8
428	Disorders of personality and impulse control	2.9	27.7	1.2	4.1
429	Organic disturbs and mental retardation	1.0	28.0	1.3	3.7
430	Psychoses	25.3	27.3	1.0	3.5
431	Childhood mental disorders	23.9	30.1	1.0	3.8
432	Other diagnoses of mental disorders	0.3	20.9	0.8	0.6
MDC 20					
433	Substance abuse, AMA	-	-	-	-
434	Drug dependence	4.5	27.2	0.6	0.4
435	Drug use except dependence	3.0	24.9	0.7	0.7
436	Alcohol use	1.1	24.5	0.5	0.0
437	Alcohol use except dependence	1.7	12.8	1.1	1.0
438	Alc. and subs induced organic mental syndrome	3.1	20.0	0.9	1.1

1 1984 DRG grouper

then hospitals or units specializing in the care of one of these groups could be put systematically at risk, resulting in them becoming the relative loser in the system. Something like this occurred in the New Jersey reimbursement system where two hospitals opened specialty child/adolescent psychiatric units. DRG weights or payment levels, which originally were based on the cost experience of adult psychiatric cases, had to be recalibrated to account for the incremental cost of children psychiatric services (Tripp 1987).

Table 1 indicates that the average length of stay of children and adolescents is relatively high. The coefficient of variation is higher than 1.00 in five of the nine ADM DRGs, demonstrating that there is a substantial variation in length of stay in these DRGs.

The average length of stay for CHAMPUS cases was 26.6 days, with longer stays (29.4 days) for children under age 15 and shorter average stays (24.8 days) for adolescents between ages 15 and 18. Long-stay patients who stay more than 2 years are not on the CHAMPUS file, thereby producing a systematic downward bias in estimates of average length of stay.

On the CHAMPUS file, 40 percent of the cases were children and 60 percent were adolescents. Eighty-seven percent of the child/adolescent cases were admitted with mental health (MDC 19) diagnosis; 13 percent of them had alcohol or drug abuse (MDC 20) diagnoses.

Analysis of the DRG Classification System

In the analyses that follow, only psychiatric DRGs (DRG 424-432) are investigated with the help of regression models. Cases with more than 60 days of hospital stay were excluded from the analysis. The reason for this decision was that OCHAMPUS policy imposes a limit of 60 days per year on covered mental health care. The limit may be waived by OCHAMPUS based on finding of peer

review of the medical or psychological necessity of stay beyond 60 days (Burton 1984). Coordination of benefits cases with insurance coverage beyond CHAMPUS are also excluded from the analysis. After the exclusion of substance abuse cases, coordination of benefits cases, and cases longer than 60 days, 4,027 cases remain for the analysis to follow.

In the model to be estimated, the dependent variable is length of stay in logged form and only the DRGs (424-432) are entered in dummy variable form. DRG 430 is used as the reference category. The purpose of this model is to measure the proportion of the variance in length of stay explained by DRGs.

The finding is that the R^2 is 0.02; about 2 percent of the variance in resource consumption is explained by DRGs. This is approximately at the same level that was estimated for the Medicare ADM DRGs. In general, the DRGs for children perform approximately at the same level as for the older population.

The low R^2 level indicates that the DRG classification system is unable to sort hospital stays into groups for which length of stay is similar within groups and different among groups.

Since DRGs poorly predict length of stay of inpatient care for children and adolescents, there is a need to refine this classification system by adding other variables which predict costs more accurately. The CHAMPUS file enables the researcher to test the cost predictive ability of some additional variables.

Determinants of Length of Stay

Patient level variables and facility-related variables were added to the DRGs to test how well they predict resource use. Resource use was measured by length of stay and expressed in logged form.

Patient Related Variables

Many studies (e.g., Schumacher, Namirow, Parker, et al. 1986) have found a significant curvilinear relationship between age and inpatient resource use. From these studies, we know that children and the elderly have longer stays than middle-aged patients. In this study, the question is if there is any pattern in resource use according to age within the child subcategory. Forness, Sinclair, and Alexon, et al. (1985) had previously found statistically significant differences in resource use according to age using a small sample of 184 cases between the ages of 6 and 15.

The relationship between gender and mental health care utilization is a well-researched yet still controversial area. It is important for the development of an appropriate classification system to know if the sex of the child is a determinant of inpatient use.

The status of the sponsor variable (retired, deceased, or active military personnel) is related to differences in the level of coinsurance as well as to differences in family structure. Family structure can be a proxy for social support which may be positively associated with shorter length of stay.

The length of previous mental hospitalization episodes is a proxy measure for chronicity in the model. The empirical evidence on the relationship between the length of previous episodes and resource consumption is inconclusive in the literature. Significantly positive relationships, significantly negative relationships, or no relationship at all have been found by different investigators. The predictive power of this variable will be tested for children/adolescents.

The type of admission (whether emergency or nonemergency admission) can be measured. It was assumed that the resource use would be higher for emergency admissions.

Facility Related Variables

Several facility-related variables are tested by the model as predictors of resource use. The underlying assumption is that such factors may provide

economic incentives to increase/decrease resource consumption and/or are associated with patient selection on unmeasured resource consumption-related variables. An important facility-related variable is hospital type. Psychiatric hospitals (private only), general hospitals, and other specialty hospitals (e.g., facilities for rehabilitation, mental retardation, etc.) can be identified on CHAMPUS claims. The provider participation variable (PRO-PRT) enters the model to test for a possible relationship between length of stay and the provider's decision to accept CHAMPUS payment level. The DIST variable serves as a local health care market indicator and is a rough proxy for urban/rural differences in length of stay. The state in which the facility is located enters the model to control for regional differences in length of stay, mental health systems, and input prices. (See list of variables in exhibit 1).

Table 2 presents the estimated coefficients. The findings indicate that the length of stay of only one DRG category differs significantly from the length of stay of DRG 430. Age is statistically significant; the negative sign indicates that length of stay decreases as age increases. Boys stay significantly longer than girls. Those who were admitted on an emergency basis have a significantly shorter length of stay.

Children and adolescents who have a retired sponsor stay for significantly shorter periods than those whose parents are active members of the military. Those with a deceased sponsor also have a shorter length of stay, although this coefficient is not significant. The sponsor variable probably measures two effects. One is differences in cost-sharing rates. Dependents of active duty members must pay the higher of the \$25 of reasonable costs incurred within each covered admission or the amount that would be charged per day for inpatient care in a Uniformed Service Hospital (Burton 1984). Dependents of other sponsors must pay 25 percent of covered costs/charges. The cost-sharing ratio is higher for the dependents of retired persons and may well have a negative effect on the length of an inpatient stay spell. Here cost-sharing differences are proxies for price differences,

Exhibit 1
List of Variables

LN-LOS	Length of stay of patient in logged form (dependent variable)
DRG	DRGs 424 through 432 in dummy variable form
AGE	Age of patient
SEX	1=male, 0=female
EM-ADM	1=emergency admission, 0=otherwise
CHRONICITY	Total number of prior mental hospitalization days
SPONSOR	1=if patient's sponsor is retired 2=if patient's sponsor is deceased 3=if patient's sponsor is active military personnel
FAC-TYP	1=private psychiatric hospital 2=specialty nonpsychiatric hospital 3=general hospital
PROV-PRT	1=if provider accepts CHAMPUS payment, 0=otherwise
DIST	1=if care provided in a facility which is outside a 40-mile radius around a military facility
PROV-ST	State of provider in dummy variable form

and the price elasticity of service utilization is negative (as was expected).

The sponsor variable may also measure differences in family structure that impact on length of stay. The year 1984 was declared as "The Year of the Military Child" by the Department of the Army, and a few articles were published in the field of child psychiatry focusing particularly on mental health problems of children growing up in military families. It was emphasized that frequent moving and readjustment has a negative impact on mental health of children and adolescents (Jensen, Lewis, and Xenakis 1986). One may infer that there is more stability in the home of retired military personnel than in active duty military families. In addition, there is a higher probability that somebody is at home in retired families who is able to care for the child after discharge. This would also have a shortening effect on length of stay. Unfortunately, we have no information to test whether or not the retired person is employed in the civilian labor force. The total number of days of previous mental hospitalization appears to have no effect at all on length of stay for this population.

Facility type variable brings some expected results. The length of stay in private psychiatric hospitals is significantly longer than the length of stay in general hospitals. The length of stay is also longer in "other" specialty hospitals. Whether or not the provider agrees to accept CHAMPUS allowance has no significant effect, though the sign, consistent with expectations, is negative. The geographic effect measured by the DIST variable (i.e., whether care is provided in a facility which is inside or outside of a 40-mile radius around a military facility) is negative and significant. It indicates that length of stay is shorter in hospitals which are outside of the 40-mile radius of a military facility. This variable is used as a local health care market indicator and serves as a proxy for differences between urban and rural areas.

The overall R^2 in this model is 0.13, which is much higher than the 0.02 R^2 in the model which includes only DRGs.

Table 2
Regression Results for LN-LOS

Variable	Coefficient
AGE	- 0.02 ***
SEX	0.10 ***
EM-ADM	- 0.52 ***
DX	
DRG 425	- 0.72 ***
426	- 0.04
427	- 0.08
428	- 0.01
429	- 0.01
431	0.07
432	- 0.11
430	(reference category)
CHRONICITY	0.00
SPON-ST	
1	- 0.16 ***
2	- 0.08
3	(reference category)
FAC-TYP	
1	0.28 ***
2	0.23 ***
3	(reference category)
PROV-PRT	- 0.08
DIST	- 0.29 ***
PROV-ST	(included)
N	4,027
R ²	0.13
F	8.83

* p < 0.10

** p < 0.05

*** p < 0.01

Discussion

The empirical results from the CHAMPUS data indicate that DRGs are poor predictors of psychiatric inpatient resource use by children and adolescents. A further refinement of the patient classification system to be used in a prospective payment system is necessary. Some of the young psychiatric patient's clinical and demographic characteristics, as well as facility type-related variables, have been tested in this study.

This is one of very few studies that explored some of the specific issues of the DRG classification system for child and adolescent psychiatric inpatient services. Some of our findings are similar to the finding of the Kings County Hospital study (Christ, Tsemberis, and Andrews 1987). Both studies found that length of stay decreases as children get older, and that boys stay significantly longer than girls. The two studies differ in other variables tested. The Christ, et al. study tests other patient level variables (e.g. race, source of referral and disposition) while this study enters some facility-related variables which were suggested by the Christ, et al. study. It has to be added here that the Christ et al. study included 1,561 children and adolescents hospitalized in the Kings County Hospital between the ages of 3 and 16. By entering all of the variables available for their study, they could explain 12 percent of the variance in length of stay.

An important finding of our study is that the facility type variable is significant for children and adolescents. Both Taube, et al. (1984) and McGuire, et al. (1985) found that the type of facility is a powerful determinant of length of adult psychiatric hospitalization. In this study, the facility type variable increases the R² of the model with 1 percentage point. Several researchers suggest that facility type should be incorporated into the DRG system in order to increase the viability of the diagnostic categorization. Yet, even if we include facility type and some of the other variables into the classification system based on

DRGs, the overall R^2 increases only to 13 percent. This is still much lower than the 30–50 percent R^2 level demonstrated for the medical/surgical DRGs.

A final comment relates to the previously cited NACHRI project. NACHRI developed Children's Diagnosis-Related Groups or CDRGs. This is a modified and expanded DRG system designed to distinguish between pediatric and adult resource consumption. Specifically for psychiatry, NACHRI researchers added 11 more diagnostic categories. Ten of these new categories were the result of splitting off the original DRG for the pediatric and adult age groups. One new category was created by distinguishing two diagnostic categories which originally were in the same DRG. After testing the mental illness-related CDRG, NACHRI indicated that the new CDRGs in MDC 19 brought some modest improvement but the changes do not represent a satisfactory solution to the MDC 19 DRGs (Steinhardt, personal communication).

Further research is needed to improve the classification system as a tool of hospital reimbursement policies and to decide which variables should be considered for modifying the classification system and which variables should be used for altering the payment scheme or payment options. Further research is especially necessary since the recommendations of NACHRI to the Health Care Financing Administration for including children's hospitals in the PPS system does not address the specific needs of children with psychiatric disorders. Although the proportion of children/adolescents with psychiatric disorders is low in the Medicare program, their special needs should not be ignored, since the Medicare PPS system serves as a model for several public and private insurers to contain costs.

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Economic Aspects of Investments in Preventing Mental Disorders in Children and Adolescents

Introduction

This paper is concerned with the economic aspects of preventing mental disorders in children and adolescents. The focus of the discussion that follows will be on the economics of the family, with special attention devoted to economic factors and policies which influence the mental health of children through effects on the structure and behavior of American families. The reason for adopting this approach is that the literature indicates that the family and its economic circumstances is a key environment associated with the mental health status of children.

Major risk factors for mental disorders among children and youth identified repeatedly in the literature include: poverty, neglect and abuse, adolescent parenting, divorce, premature and low birthweight births, physical illness (e.g., measles), and poor nutrition. Most of these factors are related to family structure and parent behavior. For this reason, we choose to broadly consider economic factors related to prevention of major risk factors for mental disorders in children, as opposed to focusing on the financing of preventive services delivered by the health and mental health services system. The goal of this paper is to present an economic approach to policy formulation in the area of prevention of mental disorders in children and adolescents.

While the intention is to cast a broad net in analyzing the economic aspects of prevention, we have placed certain constraints on the discussion. First, we do not address issues related to environmental toxins that might result in neuropsychological problems in children. Thus, we do not discuss issues related to lead exposure in children. A discussion of those issues can be found elsewhere (see, for example, Needleman forthcoming). Second, we tend to combine primary and secondary prevention technologies. The major reason

for doing so is that the boundaries between these two levels seem to blur in the area of childhood mental illness.

The remainder of this paper is organized into three major sections. The first section presents a general framework for considering the economics of prevention of mental disorders in children and youth.¹ The second section of the paper reviews the economic influences on childhood psychopathology. The last section proposes several public policy steps aimed at reducing mental problems in children and youth.

An Economic Approach to Prevention of Mental Disorders in Children and Youth

Children rely on their families as major sources of both material and psychological support for an extended period of time. The nuclear family has been given primary charge for the well-being of children in our society.² The family can be viewed as being responsible for producing services that contribute to the current well-being of children, as well as making investments which will contribute to a child's well-being over his or her life cycle. The concept of household production has been proposed by Becker (1965) and others (see Becker and Michael 1973, Fuchs 1974, Grossman 1972). Household production refers to the process by which families combine resources to produce goods and services which enhance the well-being of their members. Households typically combine marketed goods (i.e., food, clothes, and appliances) with nonmarketed goods (i.e., time and good will) to produce outputs such as good nutrition and a supportive atmosphere for their members. Households pursue such production subject to a variety of constraints. For example, time is limited (24 hours in a day), as is income. Moreover, marketed goods are costly, as is time. Thus, households are continuously faced with decisions regarding the allocation of scarce

resources so as to maximize the welfare of their members. It is in this context that we will analyze the economics of prevention.

A key function of the household is as an investor. Families make decisions which result in the foregoing of opportunities today in order to elevate well-being at a later time. One common example is saving income earned today (and thereby foregoing consumption) in order to pay for college for a child sometime in the future, which may lead to higher earnings and potential greater life satisfaction for the child at a still more distant point in the future. Other investments in children (some of which are made by society at large) include nursery schools, use of immunizations and other preventive health services, and parental time spent stimulating and teaching.

Both household production activities and investment decisions depend on the "prices" of goods and services. This notion of prices is quite broad and includes both monetary prices paid in markets for goods and services (e.g., the dollars paid for food and clothing) and implicit prices that appear in the form of time spent in home production rather than either work or leisure activities, fatigue, and engaging in unpleasant activities (e.g., disciplining a child). The allocation of household resources is posited to depend strongly on total resources (wealth) and "prices." For example, in a city where day care costs are relatively high, it may be worthwhile for one parent to reduce or not engage in labor market activities (depending, of course, on their earning potential) in order to provide child care services at home. In contrast, where day care centers are relatively abundant and prices relatively low, parents may find that devoting their time to labor market activity most effectively promotes the well-being of the household.

In the discussion which follows, we will direct our attention toward the production of child mental health. In considering the production of child mental health, we identify a number of key classes of influence on child mental health. These include: the mother and her behavior, the family and its structure, schools (both private and public) and their role, and the health and mental health

services system. We focus on the mother rather than the father for empirical reasons; that is, mothers are most often the primary caretakers. This is especially true in single-parent households. Moreover, Willis (1987) and Becker (1985) have observed that traditional sex roles within the family have persisted in spite of dramatic shifts in female labor force participation. The literature on the epidemiology of childhood mental disorders identifies a large number of factors (for example, Sameroff 1982, and Black 1979) that do not fit directly into the categories mentioned. The reason for structuring our discussion to exclude these elements is our desire to probe into factors which are amenable to being influenced by economic policy.

Economic Factors in the Production of Child Mental Health

The Mother

We begin our discussion of household production of child mental health by examining the role of the mother and recent changes in the mother's place within the household. The discussion focuses on maternal choices that may be influenced by the economic environment. These include: prenatal care consumption decisions, fertility behavior, labor market activity, and child care arrangements.

The mother's influence on a child's mental health begins well in advance of birth. A mother's health habits and use of prenatal care exert important influences on birth outcome. Of particular significance are prematurity (gestational age below 37 weeks) and low birthweight (less than 2,500 grams). Preterm babies appear to be less responsive to maternal stimulation and to display less positive affect than otherwise similar full-term babies (Field 1983). This can lead to difficulties in the early interactions between mother and child (Crnic et al. 1983). The result of this can be lower levels of

emotional and cognitive development, as measured by IQ (Ungerer and Sigman 1983). Similarly, low birthweight infants display signs of cognitive development below those for normal birthweight infants. Elevated rates of hyperactivity, irritability, and slower language development have all been associated with children with birthweights below 2,500 grams (Institute of Medicine 1985). Overall, in 1984, roughly 7 percent of all births were low birthweight. The rate for white babies was about 6 percent, while that for blacks was 13 percent (National Center for Health Statistics 1986).

Maternal behavior can significantly influence birth outcome. Harris (1982) found that timely use of prenatal care could reduce the probability of having a preterm delivery; however, he found no direct impact of prenatal care on birthweight (holding gestational age constant). Rosenzweig and Schultz (1982), in a study of a national sample of married mothers, found that maternal smoking had a large impact on the risk of having a low birthweight infant. Their results indicate that smoking one pack of cigarettes per day nearly doubles the chances of having a low birthweight delivery. They also report that timely initiation of prenatal care (during the first trimester) has a small but significant impact on birthweight. An ecological analysis of a national set of counties by Joyce (1987) found a significant and somewhat larger impact of prenatal care on birthweight outcomes. Joyce also reported large impacts of smoking on rates of low birthweight births. Thus, maternal choices regarding investments in both physically and mentally healthy children begin during pregnancy.

These investment decisions may be influenced by economic factors such as income, prices, and insurance coverage. Joyce found Medicaid coverage to have a significant influence on timely use of prenatal care. Household income has been shown by several studies to influence maternal behavior regarding prenatal care use (Rosenzweig and Schultz 1982, and Lewit 1979). Smoking behavior has been shown by Lewit, Coate, and Grossman (1982) and Rosenzweig and Schultz to depend on the levels of cigarette prices.

A risk factor that appears to exert both a direct and an indirect effect on childhood mental health status is adolescent parenting. Adolescent pregnancy appears to be related to both prematurity and low birthweight.³ Adolescent mothers often represent a convergence of risk factors, including, poverty, poor health habits, and lack of access to health services. In addition, adolescent mothers often face single parenthood, high rates of divorce, and family stress (Baldwin and Cain 1980). Some studies have shown direct effects of youth (immaturity) on parenting abilities, leading many to posit an independent role of maternal age on child mental health. Delissovoy (1975) found that adolescent mothers do not possess a clear understanding of the developmental process and have unrealistic expectations regarding child development. Kempe et al. (1980) report that this lack of understanding is a major explanation for childhood neglect, an important cause of emotional problems in children. Lynch and Roberts (1977) have linked adolescent parenting with child abuse, another key risk factor for mental health problems.

Birth rates to unmarried women between the ages of 15 and 17 years increased from 17 per 1,000 live births in 1970 to roughly 22 in 1983. This rate was roughly 13 per 1,000 live births for whites in 1983, while it was about 67 per 1,000 live births for blacks (NCHS 1985). It should be pointed out that the actual number of births to adolescent mothers is falling, but more slowly than the total number of births. Thus, this important risk factor appears to be increasingly present in the population. A variety of factors have been linked to the increase in the rate of adolescent childbearing. Fuchs (1983) points to evidence supporting the notion that most adolescent births are wanted at the time of birth. Most unwanted adolescent pregnancies end in abortion. There also has been a substantial decrease in the number of adolescent women offering their babies for adoption. Thus, contraceptive failure and abortion availability are likely to explain only a small portion of the increase in out-of-wedlock adolescent childbearing. There appears to be a shift in the desire and social acceptability of out-of-wedlock

childbearing. Other important factors may relate to the dearth of economic opportunities for adolescent women (particularly those who are poor and members of minority groups). Adolescent mothers tend to be poorly educated. Employment opportunities for women who become adolescent mothers are usually quite limited. Liebowitz et al. (1986) studied a sample of pregnant adolescents seeking health services in California. They found that those who were enrolled in school were less likely to deliver, while those eligible for AFDC were more likely to give birth. Those with higher grade point averages in school were most likely not to give birth.

Women have entered the labor market in great numbers during the past 20 years. In addition, welfare reform proposals have increasingly focused on work incentives for AFDC recipients. This has led to pressure to reduce time devoted to household production. One question raised is to what extent female labor force activity can be expected to affect the household production of mental health in children. The evidence on this point suggests an important interaction between maternal education and allocation of household resources. Hill and Stafford (1980) analyzed female household time budgets and found that college-educated women who worked and those who did not work allocated roughly the same amount of time to child care (except where an infant is present). It appears that college-educated women sacrifice sleep and leisure time in order to maintain both work commitments and child care responsibilities. This may be due in part to inelastic time responses for males. These results have recently been substantiated by Robinson (1987). For women with less education, the results are less clear. For unmarried mothers with young children, full-time labor force participation rates are low.

Full-time labor force participation rates for poor women with young children (under 6 years) was 17 percent in 1983. The effect of maternal labor force activity on child development is not well known. The evidence to date suggests that, when mother's education, household income, and race are held constant, few differences are present

in children's intellectual development between those with mothers who do work and those mothers who do not work (Moore and Hofferth 1979). The conclusion relates to the use of mother's time in the household. Once again, time invested in stimulation of the child's development and other features of the parent-child interaction appear to be the dominant variables in explaining the impact of time allocation on child mental health. The requisite knowledge, maturity, and support for these activities may be less frequently in place for adolescent mothers. This would then put their children at relatively high risk for mental problems.

Clearly, factors related to family structure, availability of day care, and household income are key economic influences on the ability of households to accommodate both female labor force activity and investment in child mental health. The level of wages paid to women in local labor markets, the price of child care, and sources of income other than that stemming from a mother's labor force activity have all been shown to exert significant influences on the labor force participation of mothers (see Beller and Graham 1985, Heckman 1973, Bergman et al. 1980, and Smith 1980). In the discussion of the mother's role in the production of child mental health, it is clear that the structure of the family serves to constrain the role of the mother. It is, in fact, the interaction of family structure, the mother's role, and economic factors such as income that are of particular concern in generating mental and emotional problems in children.

The Family

During the period from 1970 to 1981 the number of married, two-adult families increased by about 10 percent while the number of female-headed families increased by about 62 percent (U.S. Census 1982). In 1982, 15 percent of all families were headed by women. A major concern with this trend is that these changes in family structure have resulted in major stresses to the family and, especially to the children. Perhaps the most easily

identified stress is associated with economic well-being. For example, the incidence of poverty in two-parent families with children was 10.6 percent in 1984 (Current Population Survey 1985). In contrast, for female-headed, one-parent families with children in 1984, the incidence of poverty was 48.2 percent. For two-parent families, mean family income was \$34,379, versus \$13,257 for single-parent families. The differences are even more pronounced when one examines race-specific rates.⁴

Several reasons for this so-called feminization of poverty have been identified (Garfinkel and McClanahan 1985). The most obvious reason for the elevated incidence of poverty is that female household heads earn much less than do two parent households. This occurs because females in general are paid less than men (65 percent of male earnings). Sex discrimination and sex differences in human capital formation are the major reasons for the earnings differential. Since a large portion of female-headed households are headed by adolescents who have not completed high school (Current Population Survey 1985), the earnings differences are expanded. A second reason for lower earnings among female-headed households is lower rates of labor force participation among female household heads. This reflects the selection process by which mothers with relatively high income earning potential enter the labor market, while those with lower earning capacity engage solely in household production activities.

A third cause of poverty in female-headed households is that primarily only one parent contributes income to the household. Absent parents contribute a small portion to the support of children in female-headed households. Garfinkel and McClanahan (1985) estimate that payments from absent fathers to white female-headed households constitute 10 percent of family income, while absent fathers in black female-headed households contribute about 3.5 percent to family income. One reason for the low rate of child support for young, black, female-headed households is the extremely high unemployment rate among young black males. Research by Beller and Graham (1985), which found that fathers'

ability to pay is positively related to the award probability, support this contention. Another reason for low rates of child support appears to lie in great part with the courts. Sixty percent of the women potentially eligible for a child support award receive no award. Among those receiving an award, 50 percent receive the full amount, while 30 percent receive nothing. Finally, independent of child support awards, AFDC payments are often insufficient to raise family income above the poverty line.

Epidemiologic studies of childhood mental disorders have repeatedly found income to be a significant correlate with the presence of mental disorders. While the mechanism by which poverty status affects mental health has not been clearly specified, it is argued that poverty is, in general, a stressor which poses a threat to children's mental health.

Divorce contributes to female poverty due to low rates of child support awards and compliance with awards. Divorce also is posited, however, to have a direct impact on children's mental health. The rate of divorce has increased from 10 per 1,000 marriages in 1965 to 23 per 1,000 marriages in 1984 (Statistical Abstract of the United States 1985). A number of studies have shown that children react adversely to the disruption and stress associated with divorce and separation (Hetherington, Cox, and Cox 1979). The mental problems that are disproportionately found among children from families where divorce has occurred are depression and aggressiveness. Several economic factors appear to create incentives which encourage divorce. The relatively low rate of child support awards and the lack of meaningful enforcement when awards are made certainly keeps the cost of divorce low for men. The presence of AFDC payments also allows men to shift financial responsibilities for child support from themselves to the state, which also keeps the cost of divorce relatively low (Duncan and Hoffman 1985).

Research by Kellam and colleagues (1977) shows that the impact of family structure on child mental health is more complicated than what might be considered a dichotomy between the

two-parent family and the single-parent, female-headed household. They characterize family structure in six groups ranging from mother and father present to mother alone to mother absent (father alone). These categories were used to examine data on child social adaptation among first graders in a low-income section of Chicago. The results indicate that mother-father households led to the highest levels of social adaptation; however, mother-grandmother households had child mental health outcomes that were not significantly different from those of the father-mother households. Children in the mother alone households and the mother-stepfather households had the lowest levels of social adaptation. These results point to the elevated risk of mental and emotional problems to children in single-parent, female-headed households. They also suggest that there are extended family substitutes for absent fathers in the production of child mental health (i.e., grandmothers and other family). Such substitution may be influenced by economic incentives (e.g., welfare asset rules).

Research on emotional and physical abuse, as well as neglect of children, suggests that single-female household heads are those most often charged with child neglect (American Humane Association 1980). Step parents and nonrelatives are more often associated with physical abuse and sexual abuse. All forms of abuse appear to be more likely in female-headed households (Mayall and Norgard 1983).⁵ The psychological consequences of abuse are several: (1) there is an elevated risk of the abused child becoming an abuser later in life; (2) there is a higher rate of self-mutilation among abused children than in the general population (Green 1978); and (3) there has been a high rate of maladaptation reported among abused and neglected children (Smith and Bohnstedt 1981).

Another important consequence of neglect and abuse related to mental problems is head injury in children. Serious head injury in children results in roughly 100,000 hospitalizations per year (Kraus et al. 1987). Work by Brown et al. (1981) has shown that children with severe head injuries develop psychiatric disorders at higher

rates than otherwise similar children. The major cause of infant head injury appears to be abuse. For older children, car accidents, bicycle accidents, and school sports are major sources of severe head injury. It has been shown that use of helmets for bicycling and more careful use of seatbelts in cars could greatly reduce pediatric head injury.

Neglect is roughly twice as prevalent as abuse (American Humane Association 1980). Epidemiological studies of child neglect and abuse have shown that neglect, in particular, is related to household income, female-headed household family structure,⁶ families with greater numbers of children, and inadequate housing (American Humane Association 1978, Pelton 1981). Availability and access to day care, nursery school, and preschools has been shown to reduce household stress, possibly preventing abuse and neglect as well as diminishing the sequelae of neglect and abuse when it does occur (Broadhurst et al. 1979). Programs which offer out-of-the-house child care targeted at adolescent mothers may be particularly effective in preventing neglect and abuse as well as reducing psychological problems stemming from neglect and abuse (Zitner and Miller 1980).

Family structure, poverty, irresponsible behavior by absent parents, and deleterious behavior by parents and guardians under stress appear to be intertwined explanations of many mental problems found in children. Key economic policy variables appear to be (1) public support of female-headed households and the method by which that support occurs; (2) the awarding and enforcement of child support when one parent is absent (usually the father); (3) the price of child care; and (4) the price of equipment that could prevent childhood injuries (e.g., bicycle helmets).

The Schools

Schools affect the production of mental health in a number of ways: they serve as a mechanism for making investments in human capital, they provide prevention services, they can serve as substitutes for family inputs, and they can provide services which augment parental productivity in

production of child mental health. In the United States, society is increasingly relying on the schools to play an active role in the production of mental health. This is reflected in a variety of trends. Real expenditures on public schools have increased significantly between 1970 and 1983 (Digest of Educational Statistics 1984). Use of nursery schools has expanded dramatically in recent years. Fuchs (1983) reports that, between 1968 and 1981, use of nursery schools by 3- and 4-year-olds increased from 10 percent to 40 percent. Most of this increase can be explained by the rise of female-headed households, which implies that nursery schools are being substituted for parental time inputs. Legislation such as P.L. 94-142, which requires that education be provided to all physically and mentally handicapped children, greatly expands the role of school in the mental health area. This includes not only educational resources but other related services. Recent court decisions suggest that various mental health treatments are to be included as related services. Finally, the school is often a vehicle for administration of immunizations. The strong relationship of illnesses such as measles to brain damage implies that the schools play an important central role in this dimension of prevention of mental disorder.

Two main issues arise in considering the role of schools in the production of mental health. The first issue is, how do households respond to the provision of expanded social and mental health services in the schools. The second is, to what extent are school services reasonable substitutes for home production activities.

Specific prevention programs being adopted in schools include substance abuse education in elementary schools and teacher training for identifying and dealing with psychobehavioral problems in the classroom. Early learning problems in particular have been the focus of prevention efforts. This is due to research findings indicating the strong predictive power of poor school achievement on later psychiatric symptomatology (Kellam et al. 1983).

Economic theory raises the possibility that fixed quantity subsidies (such as education or

housing) can reduce the consumption of the subsidized good. Thus, when programs are required "across the board" in public schools, unanticipated reductions in child mental health care could occur. In the present case, this might include attention paid to learning problems or treatment of behavioral problems. In speculating as to the likely impacts of expanded provision of school-based mental health services, it may be most useful to segment the population. For low-income children in single-parent households (especially with an adolescent parent) there is substantial evidence that these children receive too little care of various types.⁷ Thus, it might be assumed that these children would receive virtually no preventive mental health care in the absence of the subsidized quantity provided by the schools. The implication is therefore that, for this population segment, an expanded role of the public school in prevention of mental health problems would move consumption of those services toward the desirable level.

For the segment of the population that resides in middle-income, two-parent family (or extended family) households, the benefits of expansion of prevention activities in the schools are less obvious. This is probably because children in these households are more likely to be receiving the "right" amounts of family attention, and social and medical services in the absence of the subsidized quantity. This observation might lead one to propose targeting of services, which could run counter to the provisions of P.L. 94-142. While it is generally accepted that, in the presence of budget constraints, unequal provision of services based on need or risk is a reasonable policy, it is important from an ethical perspective that mechanisms exist to assure access to services for low-risk individuals who are "needy."⁸

Several school-based prevention interventions are in use which seek to correct decrements in school performance. The DISTAR program, formation of classroom teams, and family problem solving have all been evaluated (Kellam and Larsson 1986). The DISTAR program is a very structured program aimed at overcoming learning

deficits. It also makes use of behavioral principles for encouraging performance. DISTAR is specifically aimed at children from families with low socioeconomic status. A national evaluation of DISTAR found it to result in positive outcomes in development of basic skills, cognitive achievement, and psychological wellbeing (Kellam and Larsson 1986). The classroom teams approach appears to improve classroom functioning, although improvements in psychological well-being outcomes are unclear (Kellam and Larsson 1986). The family problem-solving approach involves getting families to set up a formal reward structure for children who bring home "good news" from school. When compared with no intervention and notes on performance accompanied by the suggestion of a reward, the family problem-solving approach dominated with respect to maintenance of performance. This implies a limited degree of substitutability of school services for family inputs.

Interventions aimed at minimization of the impacts of aggressiveness in schools and other conduct problems have also been evaluated over a period of years. The "good behavior" game sets out a clear set of consequences which stem from specific behaviors. Kellam and Larsson (1986) report that, in evaluations to date, the good behavior game appears to greatly reduce the targeted behaviors. Another intervention is aimed at training aggressive children in empathic skills. This has been reported to decrease aggressiveness.

These prevention technologies appear to have at least modest impacts on prevention of antecedents of mental disorders. They also reflect considerable heterogeneity in the degree to which they target high-risk groups. Some interventions, such as the good behavior game are applied to all students, while other methods, such as training in empathic skills, are targeted at high-risk groups. Thus, there appear to be a variety of technologies available that can be chosen in accordance to the particular budgetary constraints and distribution of risk factors within the population to be served.

The Services Delivery System

A number of important inputs in the mental health production function can be purchased in markets. In particular, preventive services are delivered by the health and mental health services systems. These services include prenatal care, pediatric care, and the Special Supplemental Food Program for Women, Infants and Children (WIC). In the discussion of maternal inputs in child mental health production, we reviewed issues related to prenatal care. Those will not be repeated here. A regular point of contact for children with the health and human services sector is through a pediatrician in the course of obtaining primary health care. Visits for well-baby care and routine illnesses of childhood present opportunities for discovery of potential problems, parental education, and early action (secondary prevention) for mental and emotional problems (Goldberg et al. 1979). In addition, primary care providers are most likely to be the first professionals to be presented with signs of abuse or neglect.

Economic factors related to the use of primary health care services are out-of-pocket prices of services (insurance coverage) and poor information availability regarding the benefits of well-baby care. Most private insurance policies (excluding HMOs) do not cover well-baby care or routine check-ups for children. The Medicaid program offers relatively good coverage for pediatric services (delivered either in clinics or physician offices) for children meeting AFDC income requirements (as of 1987). A few states, however, exclude routine physical exams from coverage under their Medicaid programs. In addition, the EPSDT program has forced states to become active providers of preventive services and to seek out eligible households. It should be pointed out, however, that work by Colle and Grossman (1978) and Goldman and Grossman (1976) suggest that Medicaid pediatric patients face substantial non-price barriers to utilization.

Roughly 15 percent of households are uninsured (Current Population Survey 1986). For children in these families (which are largely low

income), the parent(s) are obligated to pay the full price for all medical care. Price has been found to have the usual negative relationship to use of pediatric care. Goldman and Grossman (1976), Colle and Grossman (1978), and Inman (1976) have estimated price elasticities of demand for pediatric care at approximately -0.10. This means that a 10 percent increase in the price of a visit will decrease demand by 1 percent. Since parents must most often accompany their children on visits for primary health care, parental time prices are relevant factors in explaining use of pediatric services. Goldman and Grossman (1976) estimated a maternal time price elasticity of -0.15, while Inman (1976) obtained a time price elasticity of -0.12. Income elasticities were estimated by Colle and Grossman and Inman to be between 0.23 and 0.38. Thus, a 10 percent increase in income would increase demand by 2.3 to 3.8 percent. Hence, policies which transfer income may be more effective than those which seek to subsidize the price of care.

The point raised by these studies is that there are important economic factors which explain contact with the primary care medical sector for children. If one believes that the primary care medical provider is central to prevention of childhood mental disorders, then one can develop policies which build on knowledge about demand behavior. This raises the question regarding the extent to which primary care providers provide effective preventive mental health services. There is little evidence, of which we are aware, as to the efficacy of primary care providers. In the general area of pediatrics, Ghez and Grossman (1980) have questioned whether or not pediatric preventive care is effective. Thus, we leave this as an important unknown.

The WIC program provides supplemental food to households at risk. This is a state-administered, federally funded program. The aim of the program is to improve birth outcomes and infant and child development through improved nutritional intake. In addition, WIC is often viewed as a mechanism by which women enter prenatal care services. Research to date which assesses the relationship

between nutritional supplementation and cognitive development and behavioral outcomes in children suggests that such relations are controversial and uncertain. Several of the initial analyses done, however, report some psychological and behavioral benefits that are attributable to nutritional supplementation (Rush 1984).

States set eligibility criteria for entry into the WIC program subject to federal guidelines. There are two levels of eligibility criteria. One set consists of certain biological markers (e.g., presence of anemia), the second relates to the economic status of the household. The federal government sets a maximum income for eligibility at 185 percent of the federal poverty level. States may set lower income standards. Some economic analyses of the WIC program suggest that the availability of nutritional supplements serves to improve the nutrition of the household but may have only modest impacts on the status of the target child or mother. This is largely due to displacement effects in the household (Rush et al. 1986).

Economic Policy and Prevention of Childhood Mental Illness

This review has not been comprehensive, although it has attempted to touch on a large number of areas related to prevention of mental disorder in children. While for some areas too little is known to guide policy, there are some rather clear relationships where economic policy could lead to strengthening of prevention efforts. We discuss several that might be most significant in this section.

Adolescent Mothering

There are a multitude of complex interwoven problems associated with adolescent mothering, especially when the adolescent is unmarried. One solution recently in vogue with the "new right" is to reduce the payoffs from welfare for being a single mother. This would involve lowering welfare payments that are already very low. Such policy would probably reduce (to an unknown degree) adolescent childbearing; however, it would impose misery (and all the sequelae from that) on at least a generation of children currently on AFDC who had no part in the choice to be born. Moreover, it would harm women and children who become eligible for AFDC for reasons unrelated to fertility choice (e.g., death of or abandonment by a spouse). This hardly seems like policy that is consistent with the values of a civilized nation.

A second approach is to lower the costs of abortion and contraception. This policy would probably result in, at most, a modest reduction in births to adolescent mothers (Fuchs 1983). Therefore, for a broad-scale intervention aimed at reduction of adolescent childbearing, one must look beyond these alternatives.

A third approach is to expand opportunities for young women both in the schools and in the labor market. This might include work study programs aimed at marketable skills, counseling, and expanded scholarship opportunities for post high school education. Finally, there is probably considerable benefit to be derived from investment in improving the mothering skills of adolescents choosing to have children. This could include improving access to information on child development in the schools and teaching infant care classes immediately following delivery at the hospital.

Another related policy would be to improve economic opportunities for young black males and to diminish the incentives under AFDC for fathers to be absent. This may result in fewer unmarried adolescent mothers, higher levels of child support when single parenthood occurs, and decreased attractiveness of AFDC.

Child Support Policy

Poverty of single mothers leads to a range of stresses and barriers to services that may increase risk of psychiatric problems in their children. One important dimension of the problem is that the costs of irresponsible behavior on the part of the absent parent (usually the father) are low. Policy measures can be taken to raise these costs in a variety of ways. First, policy regarding awarding of child support can be reviewed to examine whether or not the low rates of award are justified. Second, enforcement of payments among absent parents could be improved. This could be accomplished through withholding of earnings or the tax system. Moreover, AFDC should be structured so that child support payments are taxed at a relatively low level, rather than at 100 percent, which can sometimes occur. This would lead to improved economic circumstances for single-parent households, as well as creating an incentive for the parent with custody to pursue actions to obtain such payments.

A related set of policies involves subsidy of child care. The relatively high incidence of neglect among low-income, single-parent families, the presence of a movement toward work incentives under AFDC, and the effectiveness of day care and nursery schools in preventing child abuse all suggest that subsidized day care for high-risk women may have substantial net benefits. It would appear that a fixed-quantity subsidy in this area targeted at low-income, single mothers would not lead to underconsumption, as has been found in some areas (see Peltzman 1976).

Finally, based on research by Kellam and colleagues (1977), incentives could be created to substitute extended family for absent fathers when such situations arise. The research indicates that grandmothers and aunts can be rather effective substitutes for fathers. One relevant policy might include a family structure adjustment of "asset disregards" under AFDC. This would eliminate some incentives for potential extended families to maintain separate households. Another adjustment in AFDC payments related to family structure may

also encourage development of extended families. The details of such proposals would need to be carefully considered.

Schools

A number of reasonably effective interventions appear to be available for some problems associated with mental disorders. Targeting of the availability of various interventions appears to be sensible, although it may conflict with the provisions of federal statutes. Investments in improved immunization would appear to be a worthwhile activity that could be carried out through the schools. This is a classic case of a good where external benefits are present and underconsumption may occur.

There exist a wide variety of issues related to financing of services provided by the health and mental health sectors. So little evidence exists on efficacy, however, that it is difficult at this time to make many concrete recommendations. We have raised a number of issues here which are very complex and offer specialized fields of research by themselves. Our intention is not to trivialize these areas, but, rather, to point to the need to integrate research on the economics of the family, child care, and the health and human services system in order to appropriately consider the economics of preventing childhood mental illness.

Endnotes

- 1 We will use the terms children, children and youth, and children and adolescents interchangeably throughout this paper.
- 2 This is not true in all societies. For example, the kibbutz in Israel shares responsibility more broadly. Also, after the age of 6, the state by law begins to share in those responsibilities via the education system.

- 3 This is a controversial point. While a number of studies have found age to exert a separate influence on birth outcome, other studies argue that, when other factors are taken into account, age has no significant independent impact.
- 4 The incidence of poverty among black two-parent families was 19.3 percent, while the incidence of poverty among black female-headed families was 60.5 percent.
- 5 This does not mean that the mother is the abuser. Male abuse (both physical and sexual) appears at elevated rates in these households.
- 6 It should be noted that female-headed households are under greater scrutiny from public agencies than other types of families; therefore child neglect may be uncovered and reported more often for this type of family.
- 7 This arises partly because of income effects and partly because of the public good nature of children within families.
- 8 This point has been treated extensively in the literature on the public school's role in special education. I am grateful to Ruth Faden for discussion of this point.

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The Impact of Mental Health Treatment on Use of Services by Children

Care of the mentally ill imposes a tremendous burden on a health services system that is already straining to contain expenditures. In addition to the emotional suffering, pain, and premature death experienced by individuals, society spends vast amounts on the direct and indirect costs of care for people with mental disease. In 1978, the President's Commission on Mental Health (Volume I) estimated the direct costs of this care at 3 percent of the gross national product. The additional expenses incurred from lost productivity, increased accidents, and associated illnesses further inflate that figure.

Between 50 and 60 percent of all diagnosed mental disorders are treated by nonpsychiatric providers. In the United Kingdom and the United States, frequencies of mental illness among patients seen by primary care providers range between 5 and 35 percent (Hankin 1983, Jacobsen et al. 1980, Kessler et al. 1987). Six percent of all patients evaluated by primary care providers had a psychiatric problem as their principal concern and many more had mental disorders that contributed to their feelings of ill health, according to the President's Commission. An estimated 15 to 30 percent of patients seen in primary care settings have a currently diagnosable mental illness, with frequencies of medical use at least twice those of comparable populations without these problems (Borus et al. 1985). This is true for the elderly mentally ill (Goldstrom et al. 1987, Kessler et al. 1987), alcoholics (Holder 1987) and their families (Jones and Vischi 1979, Holder 1987), children with psychosocial diagnoses (Jacobsen et al. 1980, Hankin and Starfield 1984), and mixed populations of psychiatric patients (Kessler et al. 1982). Little is known, however, of the extent of effectiveness of services for these patients in primary care settings, particularly when compared with treatment by mental health professionals. As concerns about rapidly expanding health care budgets grow, scrutiny of the

benefits and effectiveness of mental health treatment will continue to increase.

Three criteria are relevant for the assessment of the impact of mental health treatment on people with psychosocial problems. First is a reduction in medical care utilization. One goal of therapy is subsequent reduction in use of medical services; although this is a laudable aim from the viewpoint of resource use, its benefits viewed from the vantage of the patient have not been examined. Second are considerations related to a reduction of symptoms and illness. Although most studies assume that a reduction in use of services reflects improvement of the problem, this has not been well documented. Thirdly, "spillover effects" from treatment (Jones and Vischi 1979), such as those that occur when treatment reduces costs to the educational, judicial, and occupational systems, are important.

In this paper, we review evidence for the first type of impact—utilization of services—eventually focusing on children. This reduction in services or costs has been termed the "offset" effect. Almost all published research (about 95 percent) concerns adults; it demonstrates an offset or reduction in medical care use after mental health care is initiated, but many of the studies have serious methodologic problems. In addition, the inclusion of only a few populations and health care settings has limited the generalizability of the findings to other age groups and settings.

The largest amount of information generated on the offset effect is in the treatment of alcoholism. Alcoholics and their families consume three to four times the medical resources of comparable families. Studies published prior to the 1980s concluded that, for adult alcoholics, there was reduced use of medical services after initiation of mental health treatment. Offset in costs ranged from 26 to 69 percent for alcohol rehabilitation programs (Mumford 1979, Jones and Vischi 1979). Holder's summary (1987) of more recent studies concluded that evidence indicated a general reduction in the use of medical services after specialized treatment for alcoholism.

Studies of offset in substance abusers have included relatively few patients and have been limited to examination of hospital admissions, perceptions of health, and return to work. As a result, little is known about the impact of treatment on use of services. McGuire (1981), however, noted the proliferation of private industry programs to treat drug and alcohol abuse alone. As early as 1977, there were over 1,200 such programs. This proliferation of programs in for-profit ventures could be considered strong evidence for the benefits of the offset effect.

Twelve of thirteen early papers on patients with other psychiatric disorders showed some reduction in medical care use, ranging from 5 to 85 percent (Jones and Vischi 1979).

Mumford's review (1980) of 16 studies of patients with psychosocial problems, including alcoholism, substance abuse, psychiatric diagnoses, and other more general psychosocial problems, concluded that there was an estimated average decline of 19 percent in non-mental health utilization after specialty mental health care.

Although a 20 percent reduction in utilization might not be considered evidence of high effectiveness, the sheer numbers of individuals with psychosocial problems indicate that the absolute reduction in use could be considerable with such an offset effect. Several surveys have found that 15 to 25 percent of community respondents have abnormal scores on a psychiatric inventory (Kessler et al. 1987).

In assessing the implications of these findings on offset, it is well to recognize that other factors may be operating (Jones 1979, Mumford 1979). These include the treatment setting and reimbursement method, prior level of health care utilization, and demographic characteristics such as age, race, and sex. If mental health care is part of a new benefit package, there may be a greater reduction in medical services use after treatment than usual since patients without such benefits may have excessively (and inappropriately) used medical facilities previously. Also, results may differ depending on the particular type of mental illness, the type of therapy (including length of sessions, modality,

and psychotropic drugs), the quality of services, and the duration of the therapist-patient relationship as well as particular sociodemographic and personal characteristics of the study population.

An NIMH-funded, 5-year study (Borus et al. 1985) evaluated monthly rates of utilization and was formulated to overcome some of the deficiencies identified in previous papers, especially inadequate time periods before and after mental health treatment, insufficient attention to medical and psychiatric diagnoses, and lack of evaluation of actual costs. This retrospective research was conducted at the Bunker Hill Health Center from 1976 to 1980, with 1978 identified as the index year. Offset was defined as "a decrease in post-index visits or charges of the treated subgroup relative to the post-index visits or charges of the untreated group." Four hundred patients were identified who had received a diagnosis of mental disorder in the index year. One half had received specialty mental health treatment, the other half had not. There were substantial differences between the groups. Both groups had a "peaking" effect where nonpsychiatric use increased remarkably beginning approximately 3 months before diagnosis. This peaking had been noted by others (Hankin et al. 1983, Jones and Vischi 1979). After diagnosis, the untreated population had much higher utilization, especially in the index month, and continuing into the post-index period. The treated group, at the end of 24 months, was approaching their baseline use. Over the entire interval, untreated psychiatric patients had 1.55 times as many outpatient nonpsychiatric visits. Patients with more severe illness had higher nonpsychiatric use of services, but offset was found at all severity levels. Patients receiving mental health services were more likely to have had severe diagnoses than those not receiving such services. The authors suggested that the offset differences between the two populations may have been more remarkable had the distribution of patients been more equal, since less seriously ill patients might have benefited disproportionately more from mental health services. Charges or costs of nonpsychiatric use also declined after mental

health therapy, even dropping below the 24-month, pre-index costs for both severely and less severely ill patients.

When the costs of mental health services for the treated group were added to their nonpsychiatric care costs, the total was greater than for the untreated group. Most of the excess was accounted for by the severely ill. The authors concluded that there most likely was an offset effect which was greatest for less severely ill, and that some of the untreated group may have received mental health services from their primary care provider. The nonrandomized nature of this as well as other study designs led the authors to comment that "...referral patterns make the types and severity of the mental disorders treated by the medical generalist and the mental health specialist so dissimilar that further studies on nonrandomized comparisons of relative treatment effects will have little meaning."

Studies including children are few and far between, even though children are at least as likely to have mental disorders. Estimates of psychiatric diagnoses in pediatric populations range from 5 to 15 percent (Rosen 1979). Fewer than 1 percent of all U.S. children receive psychiatric care, but 11.5 percent of children in at least some primary care settings have relatively serious psychosocial problems, most commonly emotional or behavioral disorders, using stringent diagnostic criteria (Costello 1987).

Jacobsen and colleagues (1980), in summarizing the important role of the primary care sector in treating the mentally ill pediatric population, postulated that referral for mental health care probably leads to more appropriate use of medical care facilities, and presented data on the use of services by children with diagnosed psychiatric disorders. Computerized records from four facilities provided the data. One (Bunker Hill Community Health Center) was a fee-for-service, neighborhood institution with a strong in-house mental health service component. The second (Columbia Medical Plan) was a prepaid insurance plan, as was the third (Marshfield Clinic Program). The fourth group was a fee-for-service plan

(Marshfield). During the study year of 1975, the primary care service of the plans saw between 65 and 92 percent of all enrolled children. The rate of psychiatric diagnoses among enrolled children was between 2.2 and 3.6 percent (or between 3.3 and 10.1 percent of children actually seen) except at the Bunker Hill clinic where psychosocial diagnoses accounted for 8.2 percent of all enrolled children. (Two possible explanations were offered for the much greater prevalence of mental disorders at Bunker Hill. The first suggested that the orientation of the staff in a center with onsite mental health personnel might have introduced a diagnostic bias. The second hypothesis concerned the higher proportion of low-income residents in the Bunker Hill area as compared to the other sites.) Those with a mental disorder averaged 11.1 visits per year, in contrast to 5.1 visits per year among those without these disorders. When visits for mental health services were excluded, the population with mental disorders still had between 1.5 and 5.6 more visits by site for medical care, largely accounted for by visits to specialists. This greater service use was consistent across all child age groups and both sexes. Children with mental disorders had increased use of other non-mental health services (e.g., specialists), but not primary care providers. The authors suggested that medical care use in children with psychiatric illness may differ from that of adults as a result of differences in morbidity patterns or in the type of care sought for children's problems. Although this study did not deal directly with offset, it is the largest analysis of the use of medical care by children with mental illness.

In a study of children constantly enrolled for 6 years in a largely middle-class HMO from 1974 through 1979 (Hankin and Starfield 1984), children were divided into high, medium, or low users based on their age and sex standardized number of visits in each of three consecutive 2-year periods. Of the 2,591 children, 440 were seen at least once during the 6 years by mental health personnel. This represents 17 percent of the study population. They were compared with those who did not have any use of mental health services. Consistently

high use throughout was noted for one-fifth (23 percent) of those with mental health treatment and only one-tenth (10 percent) of those without it. Children treated by mental health professionals were also less likely to be consistently low users. When patients receiving mental health care were subdivided into care received early vs. care received late in the 6-year period, the early care group was more likely to have a decreasing pattern of nonpsychiatric use. Children with psychosocial diagnoses also were more likely than other children to have multiple types of morbidities, even excluding psychosocial diagnoses.

Other studies involving children have also suggested an offset effect in children. Riley et al. (unpublished manuscript) provided mental health services to 93 referred children in an outpatient setting, and compared their use of services with other children matched for day of initial visit, age, and gender (but not type of diagnosis). They found the referred children to have reduced their subsequent primary care utilization more than the matched children. Graves and Hastrup (1978) retrospectively studied nonpsychiatric use over 2 successive years in three groups of low-income minority children. They demonstrated significant reduction for treated children compared to both untreated and control children (however, there were only 21 children in each group). Kessler et al. (1982) reported an 8 percent reduction in nonpsychiatric use among 288 children receiving mental health treatment. They did not use a comparison group, however, and the posttreatment period was only 1 year.

One study, which included patients of all ages, separately analyzed the study population for those under 18 years of age (Hankin et al. 1983). The investigators found that mental health care was not associated with reductions in nonpsychiatric use over a 5-year period when age, psychotropic drug prescription, and history of mental disorder were held constant in children. In summary, the authors found that patients with mental disorders experienced a peak in nonpsychiatric service use around the time of diagnosis which was attenuated or offset by specialty mental health

services. When multiple variables were controlled, however, this offset effect was demonstrated only in the elderly.

A re-analysis of our own data on the 2,591 children constantly enrolled for 6 years in a prepaid medical plan (Hankin and Starfield, 1984) sheds some additional light on the offset effects. About 8 percent (180) of these children were first given a psychosocial diagnosis during the second of the three 2-year periods. These formed the study population. Almost half of these children received no specialized mental health services. We compared the number of primary care visits and the number of total visits in the 2-year period after diagnosis in the two groups of children, controlling for pre-diagnosis visits, age, sex, receipt of mental health services by a parent, and number of types of nonpsychosocial diagnoses that the children were given during the 6-year period (see table 1). Table 2 provides the results of our analysis for children who were 7-13 years old when their psychosocial diagnosis was made. Of all the variables included in the analysis of variance, only four were related to use of services in the 2-year period subsequent to the period in which a psychosocial diagnosis was first made. Female sex, total visits (but not primary care visits) in the just prior period (the period in which the psychosocial diagnosis was first made), and receipt of mental health treatment were significantly related to total visits in the subsequent period. Receipt of mental health treatment was associated with a decreased number of subsequent visits, but a larger and positive effect derived from the influence of prior total visits on subsequent visits. For primary care use in the third 2-year period, the most important variable was prior primary care use. Receipt of mental health treatment had no significant impact, but the number of types of morbidity also had a significant and positive relationship to primary care use.

In younger children (that is, those who were 2-6 years old in the mid 2-year period) receipt of mental health treatment had no effect on subsequent use, either of primary care or total services.

Table 1
**Variables Potentially Predictive of
Subsequent Number of Visits in
Children with New Psychosocial Diagnoses
in Middle 2-Year Period**

1. Age
2. Sex
3. Number of types of morbidity: Acute, Acute likely to recur, Chronic Medical, Chronic Specialty, Psychosomatic
4. Parental use of mental health services
5. Total visits*; prior two-year period
6. Total visits*; middle 2-year period
7. Primary care visits; prior 2-year period
8. Primary care visits; middle 2-year period
9. Mental health services, middle 2-year period
10. Interactions
1 x 3
1 x 4

* Excludes mental health visits.

These data add to the existing evidence that there may be an effect of mental health treatment on utilization in children, but suggest that the effect might be confined to older children. Moreover, the data suggest that the reduction in services is primarily for non-mental health specialty services and its effect is far outshadowed by other factors, particularly the nature of prior use and the presence of other morbidities that children are experiencing. Our findings from this study indicate that there were important differences in the frequency of various types of nonpsychosocial morbidities between those who received specialized mental health care and those

Table 2
**Factors Related to Subsequent Use of Services
 in Children of Ages 7-13 With New Psychosocial Diagnoses**

Factor	Subsequent Use of Services			
	Total Visits Third 2-year period		Primary Care Visits Third 2-year period	
	T value	p value	T value	p value
Sex	3.35	<.001		
Number of types of morbidity			3.81	<.001
Total visits, second 2-year period	6.73	<.001		
Primary care visits, mid-period			6.82	<.001
Mental health treatment	3.21	<.002		

who did not; those who received more services had more types of morbidity.

The inconsistent effects in prior studies of mental health services on reduction in use of primary care and total visits might be due, at least in part, to differences in the extent to which the research design involves comparable study groups, specifies the nature and extent of morbidity (both psychosocial and physical), and controls for familial influences such as coexisting psychosocial problems and possibly mental health use in parents.

Thus, there are many changes in data collection strategies that would strengthen the conclusions of future studies on offset. Adequate pretreatment and follow-up periods are important. A number of studies show that offset may be delayed until 6 months after initiation of therapy (Holder 1987). Studies involving large sample sizes are necessary in order to permit control of other influences on utilization. Controlled trials with random assignment of patients would be helpful,

but, even here, the influence of other factors must be examined in order to properly interpret the findings. Factors other than the ones mentioned include race and culture, which affect the likelihood of care-seeking behavior (Costello 1987). Patients with a previous history of psychiatric disturbance, as opposed to those with new diagnoses, may also have an impact on offset. Lastly, specification of the magnitude of reductions in utilization of primary care services and specification of the types of problems for which it is most useful would greatly inform the debate and subsequent planning for services.

The results of one more study, currently in the analysis phase, suggest the potential of more rigorous study designs. In this study, children were randomly assigned to study groups, not for the purpose of receiving or not receiving mental health services, but for the purpose of assessing the value of identifying children with psychosocial problems and informing their primary care physicians about them. The Child Behavior Checklist

(Achenbach 1978) was administered to approximately 1,000 children 6–11 years of age at a visit (the "index" visit) they made to the Columbia Medical Plan. Physicians of a random sample of half of the children were provided the results. Although our findings are still preliminary, we have information on utilization in the 6 months before the index visit, the 6 months afterwards, and the 6 months after that (for a total of 12 months after the index visit) in 685 children. Our results indicate that children with psychosocial problems who do not subsequently receive specialty mental health treatment have much higher utilization of non-mental health specialty services. We are investigating factors that may explain this finding, such as coexisting chronic morbidities. Preliminary findings indicate that children who score abnormally on the Child Behavior Checklist but are not referred for mental health care have scores not quite as deviant, on average, as those who are referred. They also have been subjected to fewer social stresses and experience less of a burden of other types of morbidity.

One of the striking findings of this review of the literature and of the findings of our newer studies is the potential importance of other types of morbidity in children with psychosocial problems. Three separate studies, involving four different health facilities, have suggested that the use of non-mental health specialty services may provide a clue to the dynamics of the relationship between morbidity and use. Jacobsen and colleagues (1980), in their four-site study, found that children with mental disorders had higher use of non-mental health specialty services. Our initial study in the Columbia Medical Plan showed that children with psychosocial diagnoses were more likely to have multiple types of morbidities than were other children.

Re-analysis of data from this study indicates that prior non-mental health specialty care is the most important determinant of subsequent use in children with psychosocial problems.

Preliminary results from our latest study suggest that children with psychosocial problems

and no mental health treatment have much higher use of non-mental health specialty services.

These results suggest that the offset effect in children is complex and that further studies only analyzing utilization are not likely to be illuminating. Instead, what is indicated is heightened sensitivity to the multiplicity of types of morbidity experienced by these children and attention to coordinating a variety of types of services by the primary care practitioner to deal with the myriad health needs of these children. We will not begin to understand the issues in financing of mental health services until more is known about the needs that generate use of services. Attention must be devoted to measuring these needs, both physical and emotional, and their interrelationship as well as their impact on the seeking and receipt of various types of services.

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Health Care for Children with Autism: Utilization, Financing, and Expenditures

In general, there is widespread agreement that the present system of financing health care does little to enhance the quality of life and coordination of services of children with severe chronic illnesses; nor does it create incentives to reduce costs.* Lacking comprehensive, reliable, systematically collected data, planners and analysts are hard put to develop new approaches to financing care for chronically ill children. Moreover, without expenditure and utilization data, planners cannot determine the relative impact of different financing plans. Both private and public insurance plans are oriented to cover acute care and have less adequate coverage of care for chronic conditions, be they physical health or mental health.

In autism, a behaviorally defined syndrome, behavior management is often a major problem. Insurance plans typically cover the cost of medication, an intrusive form of behavior management, but less adequately cover mental health services, an alternative mode of behavior management for the child. There is even less third-party payment to help families adjust to the presence of a child with autism: counseling for the family is inadequately covered, while respite care is beyond the ken of health insurance.

The availability of appropriate services for seriously chronically ill children is questionable in an age of rapid changes in the way in which health care is financed. Designed to protect against the serious medical event, private health insurance with deductibles and copayments now discourages the use of routine and inexpensive outpatient services, for which families, as a result, have to pay for out of their own pockets.

* A complete report on this project can be found in *Health Care Financing for Severe Developmental Disabilities*, Birenbaum, A., Guyot, D., and Cohen, H.J., 1990, Monographs of the American Association on Mental Retardation #14, Washington, D.C.

Children lacking insurance coverage who have life-long conditions and disabilities are particularly at risk for inadequacy of health services. Previous HCFA estimates are that Medicaid—the nation's largest financier of health care—does not pay for the health care of 40 percent of the nation's children who are below the poverty line (Butler et al. 1985). Income eligibility for medical indigence varies greatly; in California, a family of four is covered by Medicaid if the monthly income is under \$801, but, in Texas, families qualify only if monthly earnings are below \$295. Similarly, variability exists among the states in the breadth of Medicaid coverage; for example, speech therapy is paid for by only 28 states and only 24 cover dental care.

Some recent cost-conscious innovations have also been questioned by those concerned with the health status of seriously chronically ill children. Health maintenance organizations and other pre-paid programs appear to focus on keeping patients out of hospitals as a way of keeping their costs down (Mechanic 1986). Where membership is open to the community, the applicant with a seriously disabled or chronically ill child may also be discouraged from joining. In some instances, open-enrollment HMOs limit the benefits extended to subscribers as a way of keeping costs down by effectively screening out the heavy users of services.

A number of important policy research questions are raised by the above-mentioned considerations:

1. What proportion of seriously chronically ill children are uninsured?
2. To what extent is utilization of services associated with insurance coverage?
3. What proportion of families of seriously chronically ill children have been refused insurance or have had the chronic condition excluded from coverage?
4. For children with autism, what kinds of services and medications are utilized?

5. To what extent do children with autism and their families use counseling, respite, and other mental health services?
6. To what extent are families of autistic children burdened with debt and expenses?

As part of a larger national survey, data were collected on 308 children with autism, living in 7 metropolitan areas, in order to document the patterns of utilization of services, expenditures, and costs. These data are valuable tools in considering the best course in financing coverage for autistic children who are now uninsured or underinsured. When measures are considered to eliminate the insurance gap, these data can be utilized to predict the impact of proposed interventions. New financing mechanisms can be generated to make appropriate health services available to this at-risk population.

Since the President's State of the Union address in 1987, both the Administration and the Congress have been directing attention to proposals concerning catastrophic illness insurance, initially for the elderly and now for children. A persistent concern among health care policy experts is the lifelong financing problems for families with seriously chronically ill and disabled members (Anderson 1985). Despite these hopeful signs of financial relief for the elderly and recognition of the extensive problems for families with seriously chronically ill children, there are few recent studies on cost and financing of care by those who face a lifetime of extensive utilization of services. Moreover, recent reviews of the literature yielded no information on this subject where autistic children were concerned.

Review of the Literature

The 1977 National Medical Care Expenditures Study (NMCES) suggested that families will be particularly burdened financially when they include persons characterized as in poor health: out-of-pocket expenses for young adults in poor health were 2.5 times higher than for those in excellent health (Rossiter and Wilensky 1982). Since this national survey of 14,000 randomly selected households did not deliberately oversample children or persons with serious chronic illnesses or developmental disabilities, there were no expenditures reported for any of the populations ages 24 years and under with a perceived poor health status (Rossiter and Wilensky 1982). The numbers in the age group under 6 years, however, were sufficient to suggest that those perceived in fair health spend 1.7 times as much on out-of-pocket expenses as those perceived in excellent and good health. Similar trends exist when other age groups below 24 years are compared (Rossiter and Wilensky 1982).

As reported earlier (National Center for Health Statistics 1975), out-of-pocket spending has taken a larger share of family income in lower income groups than in higher income groups. Expenditures of different income and educational groups were not consistent in the 1977 NMCES, but the fact that the lowest income groups spent proportionally more than the higher income groups suggests that it is necessary to document to what extent families with children who are seriously chronically ill or developmentally disabled are similarly or perhaps even more burdened when found in lower income brackets.

In addition, income and financing may affect access to services for these at-risk populations. Newacheck and Halfon (1986) found that "children with substantial health problems from low income families continue to lag behind their higher income counterparts in similar health" as far as access to ambulatory services is concerned. Moreover, less than half of these low-income

families with children reported to be in fair or poor health were eligible for Medicaid. Within the low-income group, all children with limited activity and lacking Medicaid averaged 1.6 fewer physician visits than the Medicaid users. These children had 2.8 fewer visits annually than similarly limited children from higher income families (Newacheck and Halfon 1986).

When compared to normal children, the chronically ill are clearly heavy users of health care services. In a single site study in Cleveland which focused on children with known diagnoses of serious chronic illnesses and developmental disabilities, compared to healthy peers who were hospital clinic users from the same area, substantial differences were found in use of both ambulatory and inpatient services (Smyth-Staruch et al. 1984). In particular, children with congenital conditions used a disproportionate amount of services from physician-specialists, and occupational, speech, and physical therapists: the services used by the chronically ill and disabled children were 10 times those used by the comparison sample.

Key elements in understanding the articulation between services and financing mechanisms for seriously disabled and chronically ill children are the public laws that regulate private insurance, generate tax deduction options, and create entitlement security legislation (Weeks 1985). Typically, a seriously disabled child has a health care problem of such magnitude that federal programs, state program, and private insurance all can be triggered into action, shaping the quality and quantity of the services delivered.

While they constitute a small proportion of the total number of children, it is clear that severely disabled and chronically ill children will always require services for assistance in leading lives which are as normal as possible.

...2.1 percent of children under the age of fourteen had severe limitations of activity due to health conditions. These children accounted for 12.9 percent of hospital discharges and almost 25 percent of total hospital days for that year. They also had more than three times

the number of physician visits per child than children without limitations of activity (Hobbs, Perrin, and Ireys 1985).

Current Financing of Care for Seriously Chronically Ill Children

Since the volume of care received by seriously chronically ill children is extensive, it is reasonable to expect that the research literature on health services policy would be replete with carefully crafted studies on how services are used, how much they cost, and who paid for them. Yet some of the least understood factors contributing to poor health and quality of life—health care use, costs, and financing for chronically ill children—are hardly ever studied indepth.

In particular, no national data base exists that would permit an understanding of specific childhood illnesses and family background characteristics as they relate to amounts and sources of private and public payments, either at a single point in time or over the life of the child (Butler et al. 1985). There is widespread agreement that a comprehensive care approach to health care for children with serious chronic illness cannot be attained within the current system of financing, which is oriented primarily to hospital care (Budetti, Butler, and McManus 1982; Hobbs, Perrin, and Ireys 1985; U.S. Department of Health and Human Services 1984). Faced with a lack of information, policy analysts and planners cannot generate proposals without recently collected data, which are national in scope and focused on specific disease categories. Even the much-awaited report from the Rand experiment on the impact of health care coverage on utilization and health did not oversample seriously chronically ill children (Valdez et al. 1986). The Rand study, by the nature of its design, also provides no information on the impact on utilization of being uninsured.

Any policy recommendations to assist families of seriously chronically ill children should be carefully grounded in data targeted to determine how this population differs from other families

and what risks are run by not providing adequate financing. Starfield and Dutton (1985) have already raised this question when the results of the Rand experiment are applied to an at-risk population. Recently, Butler and others (1987) reported that health insurance coverage was a predictor of whether a disabled child had seen a doctor in the past year, even when alternative explanations such as data-gathering site location, family background characteristics, type and severity of the disability, and structural access factors were controlled. Hispanic children with disabilities were more likely than white children to be without any health insurance (Butler et al. 1987).

Utilization of Services

Chronically ill children constitute a group that uses an inordinately large amount of inpatient services. Butler and others, in their 1985 study, report that "chronic health conditions among children under age 15 accounted for 34.8 percent of inpatient discharges and 36.1 percent of days of inpatient care in 1977" (as cited in Hobbs, Perrin, and Ireys 1985). Like their adult counterparts, children with limitations in activities were more likely to use outpatient services than their healthy peers (Newacheck and Butler 1983). Furthermore, it is often noted that some children with chronic illnesses use more services than others (Starfield et al. 1984). Krischer and Cook (1985) report that, in their study of Medicaid-eligible chronically ill children in rural Florida, "inpatient services accounted for 54.2 percent of the total expenditures despite the fact that 12 percent of the cases had been hospitalized." Information is lacking on how to account for this variability, given the similarity of the children as far as severity of condition is concerned.

Additional data on utilization need to be collected according to access to different types of providers (e.g., specialties), practice settings (fee-for-service versus HMOs), or comprehensive care centers. Existing studies are often limited to a single site or disease (see, for example, Meyers et al. 1972, Vance and Taylor 1971) and do not reflect the diversity and complexity of health care

delivery in the late 1980s. While a considerable literature exists which compares the efficacy and cost of home versus hospital based service delivery (see Burr et al. 1983, Donn 1982, Levine 1975, Martinson 1979, Moldow et al. 1982, Pinney and Cotton 1976, Strawczynski et al. 1973, and Strayer 1980), what is lacking is a national study with a representative sample, depicting the full range of service utilization in cases of these rare but costly diseases. One of the few national studies, based on 1,726 special education students in 5 large metropolitan school systems, found that substantial numbers of these pupils had no regular physician (26 percent) and/or had not visited a physician in the previous year (Singer et al. 1986). Even this excellent study, however, was limited in scope and did not fully deal with cost, utilization, and payment burdens for families of seriously chronically ill children.

Costs

Little is known about the complete or total costs, both direct and indirect, for children with serious chronic illnesses. Aside from hemophilia, where the treatment costs depend greatly on the price and utilization of coagulation products, few estimates exist for other diseases. State-funded hemophilia programs have been evaluated to determine costs along with other studies of that disease which have focused on home versus hospital administration of blood products (see Aledort and Diaz 1982, Eyster 1982, Eyster et al. 1980, Levine 1974, Levine 1975, Linney and Lazerson 1979, Meyers et al. 1972, Strawczynski 1973, Smith et al. 1982). Only fragmentary reports are available for other diseases and the cost of various forms of care.

McLaughlin and Shurtleff (1978) have reported on surgical and foster care costs for children with spina bifida, including only those children they personally treated. In addition, these authors ignored such nonreimbursed costs as equipment, supplies, professional fees, and prescriptions, as was found in a Massachusetts study (Callahan et al. 1981). Ending in 1961, the long-term cost of care study for seriously chronically ill children in

Erie County, New York, did collect meticulously detailed information on costs for 45 diagnostic categories (Sultz et al. 1972). Excluded, however, were diseases of current interest such as spina bifida. Conditions such as dependence on a ventilator or other means of modern technology were obviously not studied.

Detailed information on which to build national policy is extremely thin. This has been obvious to policymakers. In fact, the congressionally mandated Task Force on Technology Dependent Children, appointed by Secretary Bowen, has yet to see any data or study of a national scope which could define the cost of care of the affected children. Furthermore, there are few studies on the alternative costs of care for seriously chronically ill children when services are provided in hospital versus through home care. In a regional pilot project to provide home care for hospitalized ventilator-assisted patients, established by the Southern California Kaiser Permanente Medical Care Program, only 4 of the 21 surviving patients were under the age of 21. Home care for these four children averaged \$348 per day, compared with a daily hospital rate of \$430 (Southern California Kaiser Permanente Medical Care Program 1987). Other detailed information on costs of care for ventilator-assisted children is based on 6 Massachusetts cases (Burr et al. 1983). One study carefully documents costs in three home care programs for ventilator-assisted children in Illinois, Maryland, and Louisiana; however children outside these programs are excluded from the study (Aitken and Aday 1985 and 1986). One study of medical costs of cancer—the second most frequent childhood killer—is based on 16 cases in a shared management program in Iowa (Butler et al., 1985). As noted, policymakers wonder how to finance high-cost medical technology and support services for at-risk children.

Sources of Payment

Information on insurance coverage for severely chronically ill and disabled children is based largely on scattered evidence from unpublished sources.

These studies often rely on small numbers of unrepresentative cases (see Callahan et al. 1981, McFarlane 1982, McCollum 1971, Majure 1981, National Hemophilia Foundation, Cumberland Chapter 1978, Levine 1974). In addition, studies which attempt to discuss more broadly the effect on the family of serious chronic illness only speculate on how restrictive insurance coverage among these families could impact the utilization of services (Meyers et al. 1972, Vance and Taylor 1971). Indeed, preliminary analysis by our research group of whether autistic and severely mentally retarded children in the initial study period are more or less likely to have a usual source of care when insurance coverage exists shows no direct relationship between coverage and different sources of care (Birenbaum et al. 1986). Singer and others (1986), however, in a national study based on special education pupils, found that insurance coverage was associated with physician visits. The study demonstrated that 20 percent fewer of the uninsured pupils visited a physician in the previous year than did the publically or privately insured pupils.

Some of the research reported in the literature reveals incomplete data collection. The few studies which focus on out-of-pocket expenses for various diseases do not provide information on percentages and dollar amounts for reimbursed services (Lansky et al. 1979, McCollum 1971, Strayer 1980). Perrin (1986) reported that payment sources varied among procedures, indicating that some insurance policies exclude certain expensive surgeries. Self-payment varied from a low of 1.6 percent for tonsillectomies and adenoidectomies to 13.5 percent for spina bifida. Private insurance was less likely to cover congenital heart disease surgery than the previously mentioned low technology procedures. Supported by a grant from the National Institute for Handicapped Research, the Human Services Research Institute has investigated models for financing care of chronically ill children, but data collection from families drawn from a national sampling frame is outside the scope of their work (Human Services Research Institute 1986).

In sum, what are needed are carefully collected data which avoid the lack of focus on serious chronic illness found in the probabilistic approach of the national health surveys and the single-site specialty clinic studies with their unrepresentative, albeit highly convenient, samples.

Methods

The national sampling frame that we created to locate children through school districts served as the basis for identifying families eligible for this study. The first step was to select representative sites, and the second step was to obtain complete lists of eligible children living in those sites. The representative sites were selected by using the 1980 census tape that describes every school district in the country, made available by the National Center for Educational Statistics. We extracted from the census tape a wide variety of data on the population of school districts, including income, type of employment, race, ethnicity, and mother's education (U.S. Department of Commerce 1983). We collected data on each site concerning the number of physicians per 100,000 population and the generosity of the state Medicaid program. We then stratified the frame by four variables related to health care expenditures: proportion of low-income families; Medicaid generosity; prevalence of the types of employers who provide health insurance; and availability of physicians. We used this information on states and localities to guide the site selection so that the sample sites are representative of the country as a whole. By virtue of the low prevalence of the disease conditions of interest, only the 297 largest school districts and special education cooperative districts, serving at least 50,000 children, were appropriate for consideration as sites. After data collection, we performed population weighting to weight the cases so that they appropriately represent children and young adults of white, black,

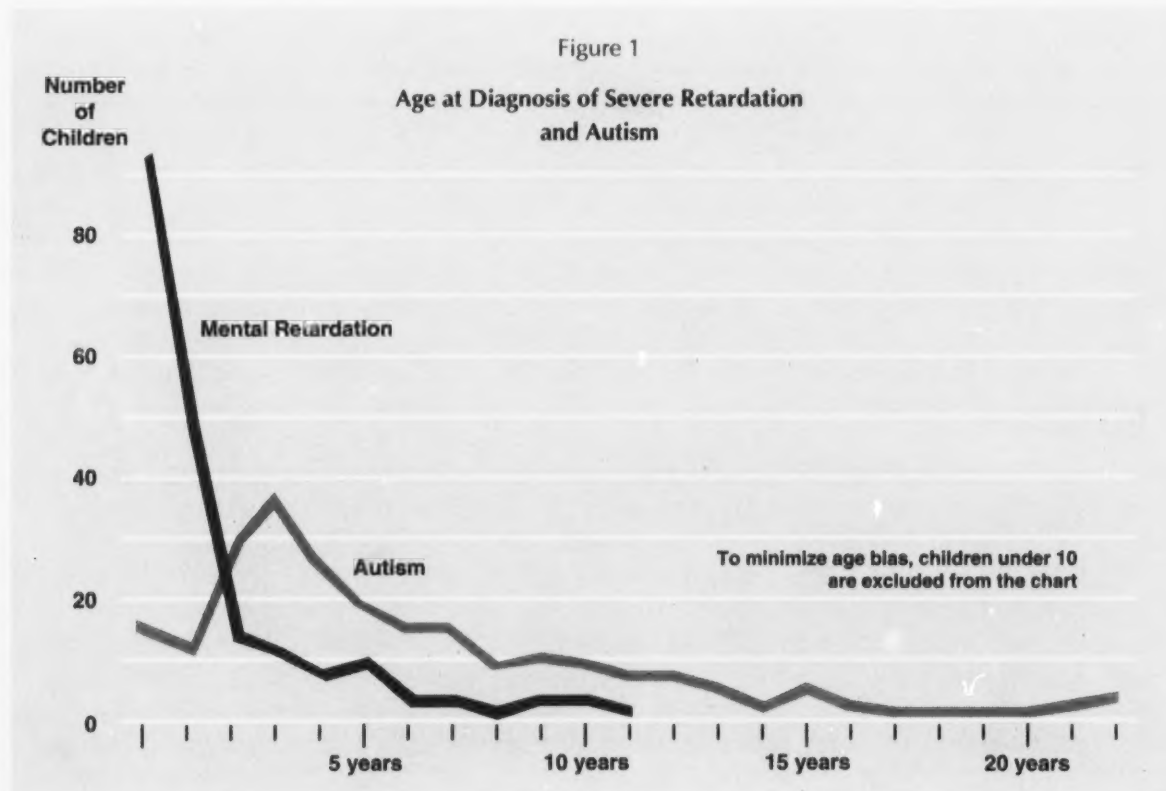
and Hispanic background in the metropolitan areas of the nine geographic regions of the United States.

The practical benefit to researchers who use school districts as study sites is that a single decision process gives access to many families. The federal law which requires service to children in need of special education, P.L. 94-142, creates the need for school records identifying the children. Local public schools are required to keep a census of all disabled children, including those served by private schools.

In order to guard against sampling families with children who would not be appropriate for the study, we collected data from pupil records concerning the criteria by which the children were assigned to special education programs. We expected to find that information was used to standardize tests for autism, and that intelligence tests were used before recommending placement

in a class for autistic children. While autistic children were generally identified before 5 years of age, as can be seen in figure 1, the ways in which evaluations were made varied a great deal among the data collection sites.

Table 1 shows the 11 school districts in the study, which lie in 7 metropolitan areas. It should be noted that the sites are drawn from all regions of the country and represent urban and suburban areas. The listing of sites is in rank order, starting with the school district which has identified the highest prevalence of children with autism and ending with the school system which has identified the least. Dallas found 5.8 autistic children per 10,000 population, which is similar to estimates of about 5 per 10,000 from epidemiological studies that also used schools to identify the children (Lotter 1966, Wing and Gould 1979). Interestingly, a prevalence of 10 per 10,000 was found recently in Nova Scotia, where the researchers adapted the



methods of Wing and Gould with broader screening criteria so that teachers screened in a higher proportion of pupils before the researchers administered standardized autism tests (Bryson, Clark, and Smith 1987).

Why do a number of the school systems in our study identify children at a prevalence of less than 2 per 10,000? The factors that contribute to this low prevalence appear to have less to do with the actual distribution of autism cases and more to do with the way schools serve these children. First, autism is excluded from the federally defined categories of P.L. 94-142 under which the states identify and serve children with handicapping conditions. Second, while states and school districts are at liberty to use autism as a category for educational diagnosis, they rarely do. For instance, in Morris

County, New Jersey, we find a low prevalence of 1.9 per 10,000 and a school system which classifies children with autism as emotionally impaired. Third, because some school systems are sensitive to parental uneasiness over the stigma of autism, they use terms such as "autistic-like" and "autistic features," rather than the term "autism." Fourth, because none of the tests for autism are considered authoritative in the way that the Stanford-Binet and the WISC are authoritative in the measurement of intelligence, educators are less likely to administer these tests. Fifth, few districts have specific educational programs for these children due to the lack of consensus on the most effective and appropriate approaches to education and behavior management. The seven districts which have identified the lowest prevalence rates also

Table 1
Prevalence of Autistic Children Ages 5 to 18
Who Were Identified by School Districts

Site	Prevalence Per 10,000	Special Characteristics
Dallas, TX	5.7	Vigorous new school screening program
Suburban Detroit, MI	2.8	State program of family stipends
Central Iowa	2.7	Many rural children in residential placement
Detroit, MI	2.6	State program of family stipends
Suburban Birmingham, AL	2.3	
Birmingham, AL	2.1	
Suffolk County, NY	1.9	
Morris County, NJ	1.9	
Fresno, CA	1.9	
Suburban and Rural Fresno, CA	1.8	
Jacksonville, FL	1.2	

provide the least comprehensive programs for children with autism. Experience in Dallas illustrates that the rate of autism known to the schools is dependent upon the school's provision of programs. In 1983, the Dallas school system knew of one child with autism. Using a vigorous screening and service program, Dallas had identified 127 autistic children by the date of our research, and, by 1988, had identified and served 147, a prevalence rate of 7 per 10,000.

Coverage of the sample ranged from 67 percent in affluent Morris County, New Jersey, to 47 percent in Dallas, where many families are poor, some lacking telephones. Out of the 308 children in the study, almost half of the cases were regarded as severe in nature (see table 2). School records, however, were not very informative about how the diagnoses were made. In 112 cases, the records provided no information. DSM III diagnoses were ascertained in 75 cases (see table 3). We can only infer that a psychological assessment was made according to the regulations governing placement in special education classes. While the distinction between autism and autistic tendencies within a single school system probably reflects the severity of the child's behavioral problems, valid comparison cannot be made among districts. For instance, Dallas classified 90 percent of their children as "autistic," while Jacksonville classified all of the few they serve as "autistic-like." Parental reporting on activities of daily living described only 20 percent of the children in the study as able to speak clearly, 30 percent as seeking the company of others, and 40 percent as able to dress themselves.

A number of different standardized autism tests could have been used by the school evaluation teams, but they were infrequently employed in determining class placement. Only 59 children were tested at least once. The most frequently used test, the Childhood Autism Rating Scale, was used in only 23 percent of the cases, mainly in Dallas. A second test used was the PsychoEducation Profile. The remaining cases were diagnosed without standardized autism tests.

Intelligence quotient (IQ) testing was completed at least once on 92 percent of the children.

Figure 2 displays the distribution of IQ scores for the children in our sample, showing few in the normal range of intelligence. Fifty percent have IQ scores below 50, and over 75 percent have scores below 70, based on Stanford Binet and WISC tests. This distribution is roughly similar to the one found in a Nova Scotia epidemiological survey. Educational programs were held predominantly in special schools (64 percent) or through special classes in regular schools (32 percent).

Data collection took place through interviews with the families and follow-up mailings to providers and payers. In March and April 1986,

Table 2
Educational Diagnosis of Levels of Severity in the Sample of Children With Autism

Severe	36%
Moderate	39%
Mild	10%
Not classified	15%

Table 3
DSM III Diagnosis For Children and Young Adults With Autism
N = 180

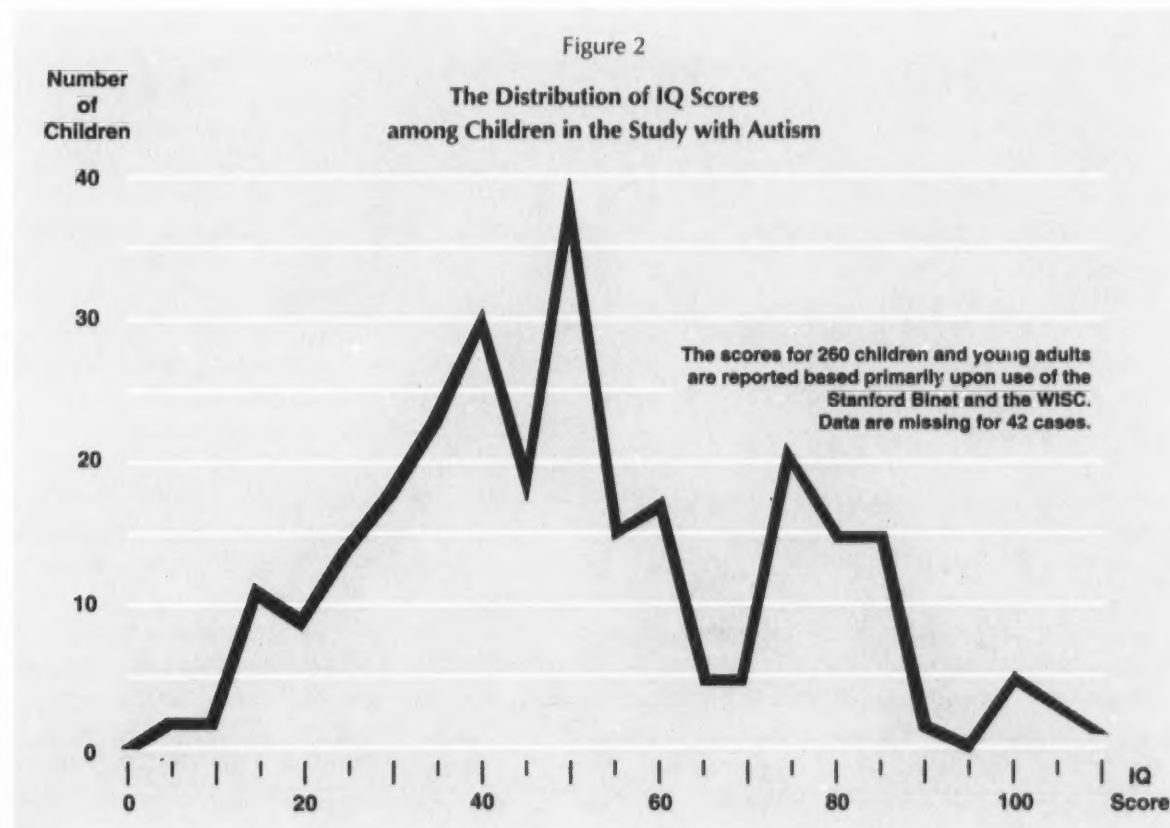
No Medical diagnosis used in the educational placement decision	58%
Infantile Autism—full syndrome present	19%
Infantile Autism—residual state	8%
Childhood onset—full syndrome present	12%
Childhood onset—residual state	<1%
Atypical developmental disability	2%

respondents were mailed calendars/diaries in order to assist them for a 3-month period in tracking medical events and expenses, including related costs such as transportation, babysitting, and the like (a unique feature of this study). Families were also sent reminder postcards to maintain their interest in keeping up the use of the calendar/diary, preparatory to the time of the interviews. Survey Research Associates of Baltimore completed interviews with 97 percent of the families that agreed to be in the study.

Closely following the model provided by the 1987 National Medical Expenditure Survey of NCHSR, we used questions about the care children received from nine categories of providers, whether there were regular sources of care, including specialty care, and details on expenditures and financing. Following field data collection, mail and telephone requests were made to providers

and payers concerning services rendered and insurance claims filed during the past 12 months, including the 3-month period covered in the family interview. These data were used to validate and amplify family-reported data on services.

Children in the unweighted sample came from families where 74 percent of the mothers were married, 14 percent were divorced, 5 percent separated and 7 percent were never married. Seventy-two percent of the children were living with both parents. Among fathers, 88 percent were employed while 32 percent of the mothers worked full time and 14 percent worked part time. For children ages 3-5, about 15 percent of the mothers were working full time, compared to the Bureau of Labor Statistics figure of 39 percent nationally. For autistic children ages 6-13, approximately 35 percent of the mothers worked full time, compared to 48 percent nationally. Income correlated modestly with



intact marriages or remarriage (.39). Sixty percent of the children in the sample lived in households of three members or less, and only 10 percent lived in households of more than six members.

Thirty percent of the families were black and 11 percent were Hispanic or another minority in this unweighted sample. (Minority group members were deliberately oversampled in order to make meaningful generalizations about the influence of race and ethnicity.) In consultation with Seymour Sudman of the University of Illinois, we are reporting the means and percentages here as estimates to represent metropolitan American and as ranges showing the variation between low and high sites. The true parameters are highly likely to fall within the ranges. The data presented below show a picture of health financing and health care delivery far different than that found for the total population of America's children.

Results

Insurance Coverage

Children with autism are somewhat less likely to be covered by private health insurance than the typical American child or the average child with limitation of activities. Autistic children in the sample under 18 years old were also unlike the children in the U.S. population without limitations in activities of daily living. A higher percentage of children with autism are insured than the national average for children (see table 4). Public support and health coverage is age related. Publicly financed health insurance takes over for the 57 autistic persons over 18 years of age

Table 4

The Percentage of Developmentally Disabled Children and Young Adults Covered by Health Insurance Compared to National Averages

Developmentally Disabled	None	Private	Public	Both
Autism	7%	49%	26%	19%
N = 308	0-18	47-59	16-28	11-22
All U.S. Children in 1986	21%	62%	11%	6%
Limited in Activity in 1980	7%	60%	18%	15%
N = 249	4-10	53-66	12-24	11-19
Not Limited in Activity in 1980	7%	69%	14%	8%
N = 5996				

Sources: U.S. data from the 1986 Current Population Survey and the 1980 National Medical Care Expenditure Survey, as tabulated by Paul Newacheck.

This is the first table where we show the ranges for the means by site, a procedure developed in consultation with Seymour Sudman. The purpose of this format is to inform the reader that the percentages presented in each table are not exact, but merely approximations to national percentages for metropolitan areas. The bottom of the range is the percentage for the site which is next to the lowest among the seven metropolitan areas in the study, and the top of the range is the percentage for the site which has the next to the highest percentage. The true percentage for the children living in metropolitan areas is very likely to fall within the range given.

(see table 5). These people are Social Security Income supported and therefore Medicaid eligible.

Autistic children without health insurance are more likely to come from families with incomes under \$20,000 than from other income groups. But insurance is not always a matter of affordability: About 10 percent of the families that currently hold private insurance stated that they experienced refusal or limitation of insurance coverage for their disabled children. Families also were not receiving much advice on either the children's Medicaid eligibility or on private insurance. Only

about 1 in 20 families mentioned receiving such advice, usually from a social worker.

Utilization of Health Services and Medication

Insurance coverage is a good link to the health care system, predicting whether a child has a usual specialist source of care or even a general source of care (see table 6). In general, only 30 percent of these families have a usual source of care for their child's disabilities. In comparison with findings on children with hemophilia and those with severe mental retardation, the children and young adults with autism use fewer of the seven types of services (see table 7). When the amount of service is taken into consideration, individuals with autism again had markedly lower use of hospital inpatient care and physicians' services than children and young adults with hemophilia or severe mental retardation (see table 8).

To what extent does a regular source of care predict utilization? For the 12 months of the study period, over 97 percent of the families with a regular source of specialty care for their autistic children made at least one visit to the doctor, compared to about 85 percent of those with no regular source of care (see table 9).

Seventy percent of the sample reported no medication use, which is substantially lower than their physicians' reports of prescription. Twenty percent were using at least 1 of 23 psychoactive medications. Over 15 percent were using one of eight neuroleptic drugs, all of which have the potential for serious side effects such as tardive dyskinesia. Only 5 percent were on a variety of sedative or stimulant medications. Almost no one reported taking any of the medications currently being studied for use in autism, such as fenfluramine, propranolol, lithium, and carbamazepine.

Mental Health Services

There was not much evidence of mental health care for the sample of autistic children, adolescents, and young adults during the year reference period. In many different ways, we asked about

Table 5
Insurance Coverage by Age

	Under 18 N=245	18 and Over N=57
No Insurance	7% 0-19	2% 0-0
Public Alone or Public and Private	35% 30-41	85% 72-92
Private Only	58% 49-68	13% 0-25

Table 6
Insurance Coverage Predicts Having Usual
Sources of Care for Children and
Young Adults Living at Home

Insurance:	None N=19	Public Only N=67	Private Plus N=198
Regular Physician	55%	75%	90%
Regular Disability Care	15%	40%	35%

Table 7
Percentage Receiving Services

	Autism N=308	Hemophilia N=79	Severe and Profound Mental Retardation N=326
Hospital Inpatient	10% 9-14	24% 17-30	25% 16-37
Emergency Room	21% 20-25	39% 33-43	24% 17-29
Outpatient Clinics	32% 28-36	73% 67-92	52% 43-65
Physicians in Private Practice	84% 80-87	83% 75-92	83% 73-89
Dentists	48% 44-57	57% 33-67	41% 28-60
Psychological Services, Counseling and Testing Services	11% 7-15	5% 0-8	17% 9-21
Physical, Speech and Other Therapy	5% 0-6	6% 0-9	19% 17-25

Table 8:
Utilization: Einstein 1986 and NCHS 1980 Data

	Hosp Admit per 1000	Hosp Days per 1000	MD Visits Annually
Autism N=309	110 100-160	900 40-1,700	4 3-5
Hemophilia N=79	500 200-800	2,100 1,700-3,200	9 5-14
Severe MR N=326	400 200-580	2,000 1,000-3,000	9 6-10
Limited Activity N=249	270	1750	4.3
Not Limited N=5,996	123	442	2.4

services received from psychiatrists, psychologists, and counselors. A psychiatrist served as the usual source of medical care for only one child in the study. Case management services were infrequent, present for only 14 percent of the children. Those fortunate to have case management were generally served by a social worker, with only two children served by a psychologist or a psychiatrist. Six children were seen by psychiatrists and two by psychologists through outpatient departments during the 3-month reference period. Only 11 percent of the sample made visits to a psychologist, psychiatrist, counselor, social worker, or psycho-metrician during that time.

Table 9
Regular Source of Specialty
Care for Autism

	Have Source	Lack Source
Had at least one physician visit in past 12 months N=308	98% 94-100	85% 78-89

Table 10
A Retrospective View of Parents
Following Medical Advice to Obtain
Therapy for Their Child

Percent of Parents Advised to Get Therapy for their Autistic Child N=308	55% 40-71
Percent of Parents who Followed Advice N=169	88% 85-95

Were parents being directed away from mental health services? We asked parents if any physicians recommended help for their children's emotional or behavioral problems at any point in the child's lifetime. Indeed, about 55 percent said that they received such advice, and about 88 percent said that they had followed it. At the time of the interview, however, only 10 children were currently receiving therapy from a psychiatrist and 20 from a psychologist; that is, 20 percent of those families were continuing to receive this type of help (see table 10).

Counseling was received by 34 percent of the family members in the sample. Families received a variety of forms of counseling from a variety of professionals. The most frequent forms were individual counseling (about 16 percent), family counseling (about 13 percent) and group counseling (about 11 percent). Over 40 percent of white families experienced counseling in some form, compared to only about 23 percent of black and Hispanic families. The higher the family income, the more likely it was that some member received counseling.

To what extent is there a perception that access to medical and psychological services enhances the quality of life for families? We asked families whether their doctor listens to their concerns about raising a child with a special health condition. About 80 percent of the respondents said yes, about 7 percent felt it varied from time to time and place to place, and about 14 percent said that their doctor did not understand their problems. Furthermore, when reflecting about all of the medical visits the child has made in the past few years, approximately three-fifths believed they saw at least some improvement while the rest found no or little improvement.

The quality of life for families of autistic children often depends on nonmedical services. Respite and summer programs are used to a limited extent by families of autistic children (see table 11). These categories are not mutually exclusive.

As hypothesized, the very families which were using neuroleptics and other psychoactive medica-

tion also more frequently employed other services for managing their children's behavior. The children were more likely to have received psychological counseling and to have a usual source of medical care for their autism. Their families were also more likely to have used counseling and respite services.

Out-of-Pocket Costs

Medical indebtedness for families of autistic children was less than for the other two disease categories studied. Only about 15 percent of the families of autistic children reported having debts, with the uninsured more likely to owe doctors and hospitals than the insured. Travel and related expenses when visiting doctors for families of autistic children were modest, with only 33 percent recalling costs of more than \$4 per visit.

The often noted destructive behavior of autistic children was dramatized in the results produced when we asked parents about damage to their homes by their children. About 40 percent of the families of autistic children mentioned home damage, as compared to only 15 percent of the families of the severely mentally retarded (see table 12). There was no relationship found between income and home repair requirements. Few families of autistic children reported home or car modification because these children did not have physical handicaps.

Discussion and Recommendations

There are findings—albeit incomplete—here which are suggestive of possible remedies of some of the problems faced by families with seriously chronically ill and developmentally disabled children in general and autistic children in particular. Some of the following recommendations are in line with the recent statement issued by the finance committee of the American

Academy of Pediatrics (Committee on Child Health Financing 1987).

First, it is clear in this study—as in so many other studies of access to care—that children without health insurance have less access to regular sources of care and do not use services as frequently as families who are insured (Aday, Fleming, and Andersen 1984). Insurance is also a predictor of use of dental services for these children. Low utilization of essential services represents unmet needs. In this decade, it should be noted, fewer children are covered by either private or public health insurance than in the past (Wilensky 1987).

Table 11

Percentage Participating in Programs

	Summer School	Special Summer Camps	Overnight Respite
Autism	47–55%	14–20%	3–9%
Severe & Profound Retardation	43–51%	10–16%	9–15%

Table 12

Home Damage According to Disability Category

	Damage	No Damage	Total
Autism	112 39%	173 61%	285 100%
Severe Mental Retardation	42 15%	233 85%	275 100%
Total	154 27%	406 73%	560 100%

Chi-square: 39.05959
Degrees of freedom: 1
Significance: 0.0000

Since relatively few autistic children are uninsured, it would not be expensive to cover the uninsured. We recommend extension of Medicaid to 200 percent of the federal poverty line and mandatory insurance at the workplace. In addition, changes in state insurance regulations concerning restrictions of claims for pre-existing conditions would also assist families.

Second, it is interesting that so few children received speech therapy, even when covered by insurance. It is possible that children receive speech therapy as a related service available in special education programs, but we do not have access to information about services provided by the schools.

Third, it is evident that families of autistic children must cope with a great deal of destructive behavior. Families could benefit from grants-in-aid programs to enhance their quality of life. The state of Michigan has created and evaluated such a program, which provides a stipend of \$225 per month until the child reaches 18 years of age.

Fourth, if counseling services to family members were more accessible and respite services were readily available, the quality of life for these families might improve. There appears to be differential access according to race and income to mental health services for family members. Finally, compared to families of severely and profoundly mentally retarded children, autistic children spend fewer overnight stays away from their families.

In sum, families of autistic children have much in common with all families of seriously chronically ill children. Insurance coverage would create a basic source of medical care even though the problem is not amenable to medical treatment. An improved financial situation for these families (i.e., less medical debt) would also encourage utilization. Finally, and most regrettably because of its absence, we recommend the development of a national policy to address and remedy medical indigence among children and their families in a society where children and young adults are the least insured of all age groups.

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Family Economic Contribution to the Care of Children/Adolescents with Mental Health Problems

The costs to society of mental health problems has been an issue within the public policy field since soon after World War II when unexpected numbers of men were rejected for service for neuropsychiatric reasons. In the last decade, methods of economic measurement have become more sophisticated, and refinement of cost levels and categories has progressed. The costs that have been included in the measures, however, have consistently excluded the economic contribution of the family to caring for members with mental health problems.

This exclusion may have been due to:

1. Lack of a conceptualization of the family (from a clinical, sociological, or economic perspective) which allowed its positive contribution to be acknowledged;
2. Concern with allocation of government dollars only and/or the cost-effectiveness of treatment models; and
3. Difficulty in acquiring reliable data on family expenses attributable to the illness of the family member.

While these reasons may have had former currency, today, awareness of the importance of family economic contribution in caring for ill family members is, or should be, widespread.

Two factors make recognition of family economic contribution an important policy issue for us to explore. First, in an era of community-based services for both children and adults—services which are often inadequate and underfunded—families bear a significant role in caring for their ill family members (Thompson and Doll 1982, Hatfield 1978). This is primarily due to the fact that many ill family members return to the home after hospitalization

(Goldman 1982), remain in the home instead of being placed in the hospital or residential treatment, or require extensive support to maintain community living—support not provided by other sources (Franks 1987). Given this reality, we need to learn about the extent of strain this situation places on families so we can determine appropriate means of remedy. We also need to understand the nature and extent of potential costs to society should families be unable/unwilling to continue to provide such support so that policy efforts can be directed effectively.

A second factor that compels us to deal with the family contribution focuses on our need for accurate information in policy making. A complete analysis of the impact of mental health needs on our society requires that all significant resource allocations be acknowledged and evaluated for their contribution. Weisbrod (1983) was the first to seriously identify family costs, but little work has been done to increase our knowledge base in this area. We have thus been left with an incomplete economic analysis of an issue which has vital importance in this era of health/mental health cost containment. Responsible policy making requires that these family costs be considered.

Given the above factors, the issue for the future focuses not on whether family economic contribution should be included as an integral part of any assessment of costs of caring for persons with mental health needs, but on how it can be accurately included.

This paper will discuss key issues associated with family expense, potential areas for research, and methodological issues to be addressed if we are to expand our empirical knowledge base and improve our ability to develop policy regarding the economic contribution of families with children or adolescents who have mental health problems.

The Context of Family Economic Contribution¹

Families who have children with mental health problems find themselves in an untenable situation. Despite developing knowledge about the etiology of major mental health problems, families are still seen by many as primarily responsible for their child's condition. While, for the purposes of developing and financing services for children and adolescents, this point is moot, stigma remains which is further complicated by the fact that the family is also seen as primarily responsible for caring for this child despite the additional costs (both psychological and economic) that are associated with the child's care.

This complex situation is particularly disconcerting given the vital role that families play in caring for their ill children. When The President's Study Commission made its recommendations regarding mental health services for children, the importance of the family was very clear: "The primary link between the continuum of services and opportunities and the child is his family. The parents have primary responsibility for initiating services and must participate in the planning for their provision....Parents are the most important resource for their child and they must be given the necessary support to fulfill that role." (DHHS 1980).

Still, some odd ideas remain. I was recently presenting findings regarding family contribution towards the care of adult mentally ill children, and one attendee questioned the extra expenses that families reported in the food category. "After all," he said, "What does it cost to feed another person? You just throw some more water in the soup pot." Interviews with families make it clear that this perception is questionable, and that there are specific costs that families bear about which we need to know more. One mother who I interviewed reported that her grown mentally ill son would only eat special kinds of foods (the types were associated with his delusional system), and that he ate these foods in large quantities. She

agreed to buy them for him because it was one of his few joys, and she worried that he might not eat at all otherwise. This extra expense was, on average, \$50 per week. The discrepancy between the "soup pot" perception and the reality of the mother's food spending indicates that research which focuses on accurate information about families' economic expenditures is much needed.

Key Research Issues

The research questions about family economic contribution can be divided into at least five component parts:

1. What are the types of expenses families incur?
 2. What are the levels of these expenses?
 3. What is the timing of expenditures?
 4. What factors influence type and level of expense?
 5. How does the child's illness impact income levels?
1. Life support expenses, including food, clothing, shelter, pocket money, and transportation.
 2. Treatment expenses, including:
 - a. Hospital and doctor bills not covered by insurance—both mental health and general health—for the child and often for required family therapy;
 - b. Medication costs, visitation expenses while in the hospital, and transportation to treatment; and
 - c. Costs of accessing and advocating for services for ill children (i.e., special assessments, long-distance phone calls, xeroxing reports, and visiting professionals)
 3. Other dollar expenses due to illness, including:
 - a. Legal fees, fines, and damages to family home;
 - b. Costs of household help needed due to illness; and
 - c. Costs of respite care (if available).
 4. Time expenses, including caregiving, advocating, lost hours from work, lost jobs, and time spent visiting with child or professionals.

These questions will be examined individually and then methodological questions regarding all of them will be discussed.

Types of Expenses

The ways in which families are required to expend resources are key areas of knowledge if we are to understand the dynamics associated with the family contribution. Current knowledge about types of family expenditures falls into several broad categories:

Further research needs to be done to identify whether these cost categories are accurate for families with young children and adolescents and whether there are additional sources of expense that we are not taking into account.

Levels of Expense

How much families spend in various categories of expense and as a total family contribution is an

important research issue. Until we know levels of family expenditures, we cannot accurately make policy regarding the family expense. Current research on families with adult children suggests that families may be spending billions of dollars a year in caring for their ill family members (Franks 1987). There is reason to believe that similar resource outputs are being made by families with young children and adolescents with mental health problems. This level of expenditure is much more than the proverbial "drop in the bucket." It is a major contribution to caring for a group of dependent persons and must be assessed for its value within society. Methodological issues are most complex in this area and will be discussed in detail in the methodology section.

Timing of Expense

It has been suggested that one of the most expensive times in the course of serious mental health problems comes during the beginning stages of the disease. It is during this time that families, as well as third-party payers, expend excessive resources (in both dollars and time) on diagnosis and initial hospitalization trying to determine the nature, course, and severity of the illness. Family cost categories during this time may include: hospitalization not covered by insurance, lost days from work getting the child admitted to hospital and dealing with preadmission crises, visiting at the hospital, meeting with mental health professionals, private therapy costs in excess of benefits (often for both the child and the family unit), and major expenditures of time on the part of the family in caregiving for a family member who otherwise would be in the process of gaining independence from the family unit (either beginning work or college or going through life stages which lead to independence).

There is the potential for this phase of family expense to be devastating economically (not to mention the emotional impact of this phase of illness). Families of the Alliance for the Mentally Ill (AMI) have reported sums of over \$50,000 per year spent during this time period (Franks 1987). Because the only economic research done on families

has been with AMI members who generally have family members with extensive periods of illness, however, there is little empirical data on spending of families with younger ill family members.² We need to look at the timing of family expenses. Do they peak early on and drop off later, or do they persist over time but change form? Are there particular periods in the family life span that are more critical in terms of the stress caused by spending that could be eased by temporary support from the system? Are there expenses which are one-time or periodic expenses as opposed to continuous expenses, due to illness? Longitudinal studies need to be conducted to identify how time periods impact on family expense.

Factors that Influence Expense

We need to understand what factors impact on variations of family expense levels and types so that we can develop supports to lessen families' financial stress. When studying families with adult children who had mental illness, several factors seemed to influence levels of family dollar expenditures. These included: the symptomology of the ill family member (the more highly disturbing the behavior, the more the family spent); the living situation of the family member (living at home was most costly to families); the level of state mental health community services funding (the more the state spent, the less families spent) and family income (families with incomes over \$50,000 per year spent significantly more than families with incomes less than \$10,000, although it was not a larger percent of their discretionary income). Whether these suggested factors are also applicable to families with young children and adolescents needs to be evaluated. Are there other factors that may have more influence on family expense spending that are unique to the dependency status of minor children? And what are the factors that influence family time expenditures? The model used to partially explain AMI family dollar expenditures did not appear to fit time expenditures. An indepth analysis of this important resource use is needed.

Impact on Income of Child's Illness

While understanding expenditures is vital, the knowledge we gain from these data is incomplete if we do not also take an equivalent look at income levels. Some of the questions to be asked include:

1. Has someone (probably the mother) had to quit working to care for an ill child?
2. Has someone had to seriously reduce the number of hours worked or change job type or place to be able to accommodate the needs of the child?
3. Has someone (probably the father) had to forego promotions due to the need to keep the child in a stable program or environment in a particular geographic location?
4. Has there been income lost due to the need to take time off from work without compensation?

These issues have been found to be relevant with other dependent population groups (Baldwin 1985). Whether or not they apply to families with children who have mental health problems needs to be assessed.

Methodological Issues

The process of trying to measure additional or excessive family expenses of raising children with mental health problems contains a myriad of inherent complexities. These can be grouped into several categories, including:

1. Defining the population;
2. Defining excessive expenses;

3. Generating a sample with a comparison group; and

4. Valuing family contribution.

Defining the Population

While there are potential costs to all families who have members with a mental health problem, some children and adolescents obviously require more resource expenditures than others, and factors which influence family expense may vary with types of mental health problems. Some of the issues discussed in this paper will probably apply to all families to some extent, but, in order to conduct meaningful research, a definition of the population to be considered must be developed.

Factors to be incorporated into any study population definition include:

1. Age of children—up to 18 or 21;
2. Disability level—level of functioning within the family, at school, and in the community;
3. Multi-agency need—how many agencies provide services;
4. Diagnosis—DSM-III-R category or study defined;
5. Duration—length of time the problem has existed.

Since there is no universally accepted definition of who the seriously mentally ill children and adolescents are (Silver 1988), the concise delineation of the study population is vital to its usefulness in future policy development.

Defining Excessive Expenses

There has been some discussion of this issue in the literature of related disability groups that begins to illuminate these complexities. Gubman and

Tessler (1987) used a sociological perspective to look at all forms of family burden for families with adult children who are seriously mentally ill. They cogently point out the fact that "living with any family member entails costs." What becomes the issue is "whether social costs are in excess of what might otherwise be expected, were it not for the presence of a family member with a severe psychiatric disability" (Gubman and Tessler 1987).

Additionally, Gubman and Tessler note that costs of families with disabled members may be different, but they may not be excessive compared to normal costs. That is, some expenses may be dropped while other expenses are incurred due to the disability of a family member. While this is a possibility which must be explored, it is unlikely to be the case with families of ill young children. Unless the child is hospitalized for extensive periods of time (which is the last resort in current practice), the normal costs of raising a child would likely exist side by side with any additional expenses of the illness.

Sorting out the issue of excessive costs becomes quite complex when dealing with children and adolescents. In the case of adult children, one can assume a relatively low level of family expense because adult children are expected to have reached the level of both economical and emotional independence from parents. Even in cases where nondisabled adult children return to family homes in times of crisis, the expenses in this situation would be expected to be of a temporary nature. Only the ongoing long-term expenses of having a disabled adult child within the home would likely exceed typical family expense levels.

When considering the young child who is expected to live at home whether or not she or he is ill, the methodological problem is of a different nature. Certainly, normal expenses of food, shelter, clothing, and other life support expenses would be expected. Since dependency status is the norm for children, the key issue is the development of a methodology that would assess what might be additional to normal expenses, taking into account the specific needs of children and

adolescents depending on their age, level of development, and maturation.

Given the lack of empirical knowledge in the area of family expenses, at this time, it is risky to make many assumptions about this issue. Generating data which identify family costs in excess of normal costs of caring for children and adolescents may require data on both families with ill members and families with children who do not suffer from mental health problems.

Comparison Groups

By the use of comparison groups, costs of families with nondisabled children could be compared to costs of families with children who had mental health problems. Any additional expenses identified could be analyzed in relation to the existence of a mental health problem. The difficulty with this method focuses on access to such a comparative sampling frame and adequacy of sample group size to allow for generalizability to the larger population.

An example of how this methodology might be implemented is discussed by Baldwin (1985). She had the opportunity to mount such a study in England when the policy issue was raised regarding levels of cash benefits for families with (primarily physically) disabled children. Using data from the Family Fund Register, a government office established in 1973 to give help to families with severely disabled children, and the National Family Expenditure Survey, a continuous government survey providing information annually on the incomes and expenditure patterns of a representative sample of households in Britain, she was able not only to compare variations in family expense levels and types but also to explore variations in income levels (a subject yet to be discussed here). Without the existence of similar data sets within this country, developing a sample of families to meet comparative group criteria would be costly, but it would result in the most definitive findings.

A less rigorous method, but one that would still allow for comparison, would involve identifying a sample of families with children who had

mental health problems and comparing them to data available regarding the average costs of raising children. Espenshade (1985), for example, has done an analysis of cost of childrearing using Consumer Expenditure Survey data (the CES is a survey conducted by the Bureau of the Census for the Bureau of Labor Statistics). While this data set has limitations (i.e., it does not separate out families with disabled children) it may be a possible second best alternative in arriving at a comparative group.

Valuing Family Contribution

There are a myriad of issues in actual measurement once an acceptable sample is developed. Tastes and preferences, a standard concept of economists, is a factor when valuing costs. A family may, in fact, spend money due to the child's illness, but is that expenditure a function of choices or is it a function of need that can be generalized across families? Another question to consider is how families economically adjust to the illness of their child to minimize the effects on the family unit. Some families may have better ways of managing money or of reallocating resources within the family or accessing resources through the extended family network.

The area of caregiving and family time expense also poses methodological dilemmas. The complex nature of valuing family time expense focuses on two factors. First, as with dollar expense, we need to determine what is excess due to the illness. Second, we need to value that time as accurately as possible. The opportunity cost of time expense may need to be considered when valuing family time expense. Since studies (Franks 1987, Komarovsky and Stack in Gubman and Tessler 1987) indicate that higher income families tend to spend more money and lower income families tend to spend more time on family members, it is possible that opportunity costs for families with children or adolescents who have mental health problems vary in a way that is significant.

Another method of valuing the family time that may be useful is to consider the replacement cost value—that is, what it would cost the mental

health system to replace the time spent by the family in caring for the family member. This conceptualization allows for a more standard valuing of the time disregarding family income, but requires that we assess whether the time spent by the family would actually be replaced, in an identical fashion, by the system if it were to become responsible for the child. For example, a family may report 10 hours per month in time spent dealing with a mental health professional or 60 hours per month in caregiving functions that are due to the illness. In the former case, the system would not have to replace that time. In the latter case, caregiving would likely not be as intensive or individualized if provided by the state and, therefore, the cost may be less (even though this may not be best clinically for the child).

Effective resolution of this methodological factor requires that family time expense be delineated as specifically as possible so that an assessment can be made of appropriate replacement costs. In contrast to work done within the mental health field, measurement of caregiving of elderly persons and persons with developmental disabilities has become quite detailed. Some of the caregiving issues are the same across populations and may be transferable, but, because of the lack of physical disability on the part of our populations and the existence of caregiving needs of a psychological support nature, some issues are very different and need to be identified and evaluated separately for mental health groups.

Conclusion

I was asked to talk about potential research questions and methodological issues in relation to the family economic contribution to care of children and adolescents with mental health problems. This paper has tried to lay out some of the key questions that need to be answered. It has not focused on why they need to be answered. What

good will it be when we are able to accurately measure family economic contribution? One policymaker suggested to me that, when we know how much families are "saving the system," we can thank them very much and let them continue in their current role. The issue, however, cannot be that easily dismissed. In an era of community care, society and the family must come to an understanding of "shared responsibility." As Moroney has so aptly stated, "the case can be made that a caring society must involve some sense of shared responsibility. The essence of sharing begins with a recognition of the contribution that families are making....If anything, families should be supported by a caring society if that society is concerned with its future." (Moroney 1983)

Analysis of family expense and factors that influence them should provide us with information to help in the development of policy regarding the provision of support to families at times when they need it, and in ways that they need it, so that they can continue to do what the vast majority of them do best—raise their children (disabled or not) in a loving home.

Endnotes

1. While most writers use the term family burden to refer to all forms of impact families bear due to the illness of a family member, I have chosen to refer to family contribution when discussing the economic expenses of families. This semantic change realigns the concept within a more positive rubric and places the family resource allocation on a par with other forms of economic resources needed to care for members of our society who are disabled.
2. It has been suggested that family expenses, though high in these initial stages, may reduce as illness progresses. Current research suggests this may not be true. Rather, what appears to occur is a shift in the types of expenses families incur from hospital bills and therapist costs to support costs for living situations that are not within the mental health system.

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Assessing National Data Bases Related to Financing Mental Health Services for Children and Adolescents

Introduction

A growing body of national survey data exists which can expand our base of knowledge about financing mental health services for children and adolescents. This report will include information on locating, assessing, and using these national data sources. This analysis is based in part on a previous inventory of national surveys on financing health services for children with special health care needs, supported by the Bureau of Maternal and Child Health, which resulted in the *Guide to National Data on Maternal and Child Health*. Since that 1986 publication, several national surveys have expanded or added new sets of questions related to financing. These new data sources will also be included in this report.

To provide a more indepth assessment of financing data collected in national surveys, 14 surveys will be reviewed in detail regarding the information they collect on health expenditures and insurance coverage, followed by recommendations for improving the use of extant national surveys.

General Strengths and Weaknesses of National Financing Data

National data cannot be surpassed in terms of public access to information; expertise of staff to respond to requests for information; consistent and useable presentation of survey findings; and low-cost availability of publications, unpublished tabulations, and public use tapes.

Our national health care expenditures surveys of 1977, 1980, and 1987, for example, are tremendous sources of comprehensive financing information. If you have ever attempted to collect health expenditure and insurance data, you

must respect the monumental effort that the National Center for Health Services Research and the Health Care Financing Administration regularly undertake in conducting these large surveys. Of course, we would all like to see an oversampling of children with special health care needs and additional questions on child health status in these surveys. Nonetheless, these national health expenditure surveys contribute significantly to our understanding of health care costs and insurance coverage for all children and their families.

While national financing data are expanding and are extremely accessible, they suffer from the following limitations that are significant for examining public policy issues concerning health insurance. First, the time lapse between conducting a national survey and disseminating public use tapes and published data varies considerably and can range up to 3 years or more. During that period, insurance shifts consistently occur and survey results become quickly dated. Second, most national surveys do not have large enough samples or are not designed to perform state-specific analyses, except through the use of synthetic estimation techniques. Because insurance is subject to state regulations and rules, relying on national or even regional financing data poses major barriers.

Third, very few national surveys are longitudinal. This limits our ability to understand continuity of health insurance coverage, which for children and adolescents is an extremely problematic areas.

Fourth, national survey data provide little information on unmet needs. Instead, the focus is on use of health services. As a result, we do not have a clear understanding of what services families believe they need and forego as a result of insurance problems.*

If we understand some of the general limitations of national financing data—time lags; minimal state data; cross-sectional rather than longitudinal data; and use not need—we can better adapt our expectations and begin to think about how other data sources might fill the gaps.

* One exception is the NMCUES, which contained a supplemental set of questions on barriers to care.

Summary of National Data Sources on Financing

To begin this assessment of national data sources on financing, 19 national surveys were examined to determine which collect health expenditure and insurance coverage data (see table 1).

Less than one-half of the 19 national surveys reviewed contain health expenditure data, and two-thirds collect health insurance coverage or source of payment data. As a result of this preliminary assessment, 14 surveys were selected for indepth analysis as potential sources of information on financing mental health services for children and adolescents.

Table 2 is a matrix summarizing each of the 14 surveys according to the specific information it collects on health expenditures and sources of payment. This information is based on our 1986 inventory, except for the addition of the Current Population Survey (CPS) and the 1987 National Medical Expenditure Survey (NMES). It should be noted that several of the 12 other surveys have been updated since 1986, and, as a result, some of these measures may have changed.

Identifying and Assessing National Surveys that Collect Health Expenditure Data

Of the 14 "financing-related" surveys, only 7 surveys collect health expenditure data. Since two of these surveys (ARF and CPS) collect such limited expenditure data, they will be excluded from further discussion. The following five national surveys contain the most detailed health expenditure data:

1. The Consumer Expenditure Survey, sponsored by the Department of Labor, and conducted annually since 1979 (1985 data are currently available);
2. The 1977 National Medical Care Expenditure Survey, sponsored by the

Table 1
Summary of Selected National Surveys
with Health Care Expenditures and Source of Payment Information

Survey	Health Care Expenditures	Source of Payment
1. Annual Census of Additional and Resident Patients in State and County Mental Hospitals	NO	NO
2. Area Resource File System	YES	NO
3. Birth Defects Monitoring Program	NO	NO
4. Census of Persons in Institutions and Other Group Quarters	NO	NO
5. Child Health Supplement (to the National Health Interview Survey)	NO	YES
6. Consumer Expenditure Survey	YES	YES
7. Current Population Survey	NO	YES
8. High School and Beyond	NO	NO
9. National Ambulatory Medical Care Survey	NO	YES
10. National Health and Nutrition Examination Surveys	NO	YES
11. National Health Interview Survey	NO	YES
12. National Hospital Discharge Survey	NO	YES
13. National Longitudinal Survey of Labor Market Experience of Youth	YES	YES
14. National Medical Expenditure Survey	YES	YES
15. National Medical Care Expenditure Survey	YES	YES
16. National Medical Care Utilization and Expenditure Survey	YES	YES
17. National Natality Survey and National Fetal Mortality Survey	NO	NO
18. Sample Survey of State and County Mental Hospital Inpatient Admissions	NO	YES
19. Survey of Income and Program Participation	YES	YES
Total Responding Yes:	7	13

Table 2
14 Selected National Surveys: Health Care Expenditures
and Source of Payment Measures

Surveys	ARF (1)	CES (2)	CHS (3)	CPS (4)	NAMCS (5)	NHANES (6)	NHIS (7)	NHDS (8)	NLS (9)	NMCES (10)	NMCUES (11)	NMES (12)	Sample (13)	SIPP (14)
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A. Health Care Expenditure Measures

Individual/ Total Charges										▲	▲	▲		
Individual/ Total Payments		▲								▲	▲	▲		
Individual/ Total Reim- bursements		▲								▲	▲	▲		▲
Out-of-Pocket Payments		▲								▲	▲	▲		
Premiums		▲								▲	▲	▲		
Employer/Union Contributions		▲		▲						▲	▲	▲		▲
Copyments & Deductibles														
Outstanding Medical Bills														
Other	▲													

B. Source of Payment/Health Insurance Coverage Measures

Third Party Payer(s)	▲		▲			▲	▲	▲		▲	▲	▲	▲	▲
Type of Plan (Indiv., Family)	▲		▲				▲			▲	▲	▲		▲
Insurance Benefits						▲		▲		▲	▲	▲		
Time Period of Coverage										▲	▲	▲		▲
Reason for Lack of Insurance						▲	▲			▲	▲	▲		▲
Other							▲		▲					

Source: McManus et al., *Guide to National Data on Maternal and Child Health with Special Emphasis on Financing Services for Children with Special Health Care Needs*, Washington, D.C.: National Center for Education in Maternal and Child Health, February 1986.

National Center for Health Services
Research and the Health Care Financing
Administration;

3. The 1980 National Medical Care
Utilization and Expenditure Survey
(NMCES' successor);
4. The 1987 National Medical Expenditure
Survey (NMCUES' successor); and
5. The Survey of Income and Program
Participation, sponsored by the Depart-
ment of Commerce, and conducted
annually since 1983 (1985 data are
currently available).

Interestingly, the national data sources with the most current health expenditure data are not DHHS-sponsored surveys. Rather, they are surveys supported by the Departments of Labor and Commerce. Not surprisingly, the health data contained in both the Consumer Expenditure Survey and the Survey of Income and Program Participation are limited.

The *Consumer Expenditure Survey* (CES) includes very detailed information on health expenditures by consumer unit, not by individual family members. Therefore, it is impossible to determine what portion of consumer unit health expenditures goes for children. The health expenditure data requested in the CES includes payments made for medical services, such as inpatient hospital services, physician services, services of practitioners other than physicians, eye care, dental care, medications, and medical supplies. It also asks about insurance premium costs, premium contributions, and out-of-pocket payments for medical care. In addition, extensive information is available on source of payment, as described below.

Absent from the CES are questions on health status, severity of illness, and health services utilization. In other words, researchers and policy-makers can determine from the CES how much consumer units spend on medical care and for what, but not the reason why. Notwithstanding,

this expenditure survey is one of the most relied-upon national data sources on consumer health expenditures and forms the basis for the medical care component of the consumer price index. In summary, from the CES, annual expenditure data can be obtained on a range of health services as well as types of insurance coverage for those consumer units defined as families.

The latest DHHS-supported national expenditure survey is the 1987 National Medical Expenditure Survey (NMES). Briefly, NMES sampled about 14,000 households representing the civilian noninstitutionalized population. Blacks, Hispanics, American Indians, and Alaska Natives (eligible for the Indian Health Services programs), the poor and near poor, the elderly, and persons with functional limitations were oversampled. In addition, 13,000 persons in nursing homes and facilities for the mentally retarded will be sampled.

The national health expenditure data that NMES collected include charges and payments for a very comprehensive range of health services, out-of-pocket payments, and premium costs and contributions. These health expenditure data can be analyzed by health status, severity of illness, use of services, delivery system characteristics, and source of payment.

If the 1980 NMCUES experience was any lesson, however, the drawbacks for NMES and children will be the small sample size of children with special health care needs, the lack of state-specific data, the complexity of the data set, and the timely availability of the public use tapes. NMES promises to be the most comprehensive health expenditure data source for children.

The Survey of Income and Program Participation (SIPP) has less information than the CES on health expenditures, but more on health status, severity of illness, and health services utilization. Specifically, SIPP's health expenditure questions only cover whether or not insurance reimburses the complete cost of doctor visits and what portion of the insurance plan is reimbursed by the employer or union. SIPP does, however, ask extensive information on source of payment, as described below. Although SIPP was not designed

as a health survey, it does collect information on prevalence of health conditions, perceived health status, limitation of activity, work disability, bed disability, school disability, hospitalization, and physician or qualified assistant visits—but only for persons 15 years and older. (Note: several questions regarding severity of illness for children between the ages of 5 and 18 years were asked.)

Another unique advantage of SIPP is that each annual sample is interviewed for approximately 2-1/2 years, providing important longitudinal information. On the down side, SIPP's questions on health conditions are not indexed by ICD code. Instead, they collect information by large condition groups which are not comparable to those used by the National Health Interview Survey. In addition, no question is asked about what health condition is responsible for the long-lasting mental or emotional problems which may limit a child's ability to learn or perform regular school work. The sample size of children with chronic conditions is relatively small. In summary, SIPP's health expenditure data are very limited. As noted below, however, use of SIPP for insurance coverage or source of payment data offers important research opportunities.

Using National Health Care Expenditure Data

While waiting for the NMES data to be released, researchers and policymakers must rely on dated health care expenditure information and updates using the medical care component of the consumer price index or other appropriate indices. For example, one can use and update the 1977 or 1980 National Health Expenditure Surveys, recognizing that both contain very small samples of children with special health care needs. Similarly, the ability to examine these expenditure data by condition or levels of functional limitation are extremely limited. NMCUES and NMCES offer important historical trend information on child and family health expenditures.

Using the more current health expenditure data from the *Consumer Expenditure Survey* (CES) for consumer units that are families could offer a

timely and important norm for comparison of health care expenditures for children with special health care needs. That is, one could use the CES' health expenditure data for all family units and compare it against small area data (if available) on mental health expenditures of family units who have children with special health care needs.

Prior to the release of the NMES, federal agencies could begin to actively pursue the development of an analysis strategy. The Bureau of Maternal and Child Health and the National Institute of Mental Health, for example, might consider their most pressing financing questions and the potential of NMES to answer these questions—going from policy questions to a national data source. They could also go from data to policy questions and determine what analyses are possible using the NMES data and strategize the best approaches for encouraging timely analysis of these data to respond to important financing questions.

To obtain reliable and timely health expenditure data, particularly related to mental health expenditures, it will be important to supplement national data with state-specific and small area studies.

Identifying and Assessing National Surveys That Collect Source of Payment/Health Insurance Coverage Data

Of the 14 "financing-related" surveys listed in tables 1 and 2, 11 surveys ask questions about source of payment or health insurance coverage. Since three of these surveys (NHANES, NHDS, and SAMPLE) collect such limited insurance data, they will be excluded from further discussion. The following eight national surveys will be examined in greater detail:

1. The Consumer Expenditure Survey, described above;
2. The Current Population Survey, sponsored by Department of Census and conducted annually (1986 data are available);

3. The National Health Interview Survey, sponsored by DHHS and conducted annually (1986 data are available);
4. The National Longitudinal Survey, sponsored by the Departments of Labor, Health and Human Services, and Defense, and conducted periodically since 1977 (1986 data are available);
5. The 1977 National Medical Care Expenditure Survey, described above;
6. The 1980 National Medical Care Utilization and Expenditure Survey, described above;
7. The 1987 National Medical Expenditure Survey, described above; and
8. The Survey of Income and Program Participation, described above.

Seven of the eight surveys listed above have questions on third-party payers and whether the insurance plan covers the individual or the family. Beyond that gross level of detail, only the NHIS and the three national health expenditure surveys ask specific questions about benefits. Of these, only the national expenditure surveys ask questions that go beyond hospital, physician, disability, and dental benefits. Questions about reasons for lack of insurance coverage are asked in five out of the eight surveys.

It is therefore important to distinguish which national surveys provide information on who is covered by public or private sources and which surveys provide insurance benefit information. Benefit questions in the national health expenditure surveys, for the most part, focus on coverage of "traditional" health care benefits (e.g., hospitalization and physician visits). Unfortunately, in most public and private insurance plans, mental health benefits are distinctly separated from other health benefits, and special restrictions, coinsurance requirements, and annual and lifetime maximums

are imposed. Because of this, it will be useful to carefully examine the 1987 NMES health insurance benefit questions in greater detail to determine how mental health service benefits are treated. I suspect even this comprehensive insurance survey will offer little. If that is the case, it may be beneficial to work more closely with other public and private insurance survey firms to examine the depth of insurance coverage for mental services in public and private insurance plans (see reports by Fox Health Policy Consultants, Inc., on public and private insurance coverage of early intervention services as an example). In the meantime, the 1987 NMES health expenditure information on out-of-pocket expenditures might serve as a useful proxy regarding depth of coverage for mental health services.

Moving from the issue of benefits to actual source of payment, we find that many more national survey sources exist—primarily for children in general and to a lesser extent for children with special mental health care needs. The following section assesses each of the eight surveys in terms of their questions on health insurance coverage related to financing mental health services.

The *Consumer Expenditure Survey* (CES) offers extensive information on health expenditures that can be combined with the questions on third-party payer and type of plan for all consumer units that are families. It is impossible, as discussed earlier, to collect information on children alone or on health status from the CES.

The *Current Population Survey* (CPS) is a commonly used source of information about health insurance coverage, and it is updated every March. The Bureau of Census collects insurance coverage information by a range of demographic factors (i.e., age, income, household status, region, race, marital status, and work experience); however, no health status information is collected for children. Therefore, while this is probably the most current national survey on health insurance coverage, it is only possible to look at children in general, not at special needs children.

The *National Health Interview Survey* (NHIS) collects no information on health expenditures, a

limited amount on health insurance, and a great deal on child health status, severity of illness, and utilization of services. The insurance questions in the 1986 NHIS will provide cross-sectional information on third-party payers, including whether the insurance plan is a health maintenance organization; and benefit coverage for hospitalization, doctors' and surgeons' services associated with operations, and dental care.

Several researchers have reported that the NHIS data underestimate the prevalence of mental health problems. Since the NHIS does provide a current, albeit limited, source of insurance coverage information by health status, severity of illness, and utilization of services, it may be helpful to estimate the degree of underreporting of mental health problems in the NHIS to take greater advantage of its potential.

The upcoming 1988 Child Health Supplement (CHS) of the NHIS will provide an extensive amount of relevant health status information, including information on development, learning, and behavior. The CHS will also ask about need for and use of mental health services for any emotional, mental, or behavioral problem. The only questions on insurance coverage in the CHS, however, are receipt of Medicaid and whether or not the child is insured by private health insurance.

Just as with the 1987 National Medical Expenditure Survey, it would be beneficial to develop a financing analysis strategy using the 1986 NHIS and the 1988 CHS to obtain new information on financing mental health services for children and adolescents.

The *National Longitudinal Survey* (NLS) offers limited health insurance information on young persons between the ages of 14 and 24; specifically, availability of insurance benefits (medical, surgical, or hospital benefits that cover major injuries or illnesses; life insurance; and dental benefits) and health benefits as an enlistment factor in the military. Additional insurance questions will be asked in the upcoming NLS survey. Currently, the only insurance information that researchers could obtain from the NLS would be the presence or absence of insurance coverage.

The national health expenditure surveys (NMCES, NMCUES, and NMES) offer the greatest amount of information on health insurance coverage. NMES surveyed households over five periods of time in 1987 asking about third-party payers, insurance benefits, time period of coverage (full or part year), and main reason for lack of coverage. Combined with the health expenditure data described earlier, the potential of NMES, even with a small sample of children with special mental health needs, is great.

The Survey of Income and Program Participation (SIPP) provides longitudinal data on persons over 15 years of age related to third-party payers, time period of coverage, type of plan, and reason for lack of insurance coverage. Combined with the information collected on health status, severity of illness, and health services utilization, far greater use could be made of the SIPP than is presently being made by the health services research community. Researchers need to keep in mind that the number of children included in the SIPP is relatively small.

Using National Health Insurance Data

The most comprehensive source of health insurance information will be the 1987 NMES, even though the sample of special needs children is small. The next best source of health insurance information is the 1984 National Health Interview Survey and its 1988 Child Health Supplement. Both the Survey of Income and Program Participation (SIPP) and the National Longitudinal Survey (NLS) may offer important, albeit limited, information on health insurance coverage for children with special mental health needs. Since relatively few health services researchers have used these latter two data sources to analyze mental health service financing, their capacity has not been fully tested.

The Consumer Expenditure Survey (CES) and The Current Population Survey (CPS), because of the absence of health status information, will be of limited value except to provide a broad perspective on how many consumer units, families, and

children (in the CPS) are insured and by what public or private source.

All national surveys offer limited benefit information, particularly for mental health services, where special restrictions are applied. As a result, there is a need to encourage research and policy analysis of the depth of mental health care benefits in public and private insurance plans.

Summary of Findings on Assessing National Surveys for Information on Financing Mental Health Services for Children and Adolescents

No single national survey has sufficient information on health expenditures and insurance coverage for children and adolescents with mental health care needs due to the small numbers of children and youth sampled who have special health care needs. The 1987 National Medical Care Expenditure Survey comes the closest to being that single data source, except for its small sample size.

Consequently, use of multiple national data bases supplemented with state-specific and small area financing studies will be necessary to assemble comprehensive and reliable information on costs of mental health services and insurance coverage of children and adolescents with mental health care needs. Despite the need to rely on several national and small area data sources, there remains a mass of untapped national survey data that could be of substantial value in understanding the financing of mental health services for children and adolescents.

Recommendations

Three broad areas should be considered in improving the use of national data for financing mental health services for children and adolescents.

- Identification of the financing data needs for development of a comprehensive mental health system during the next decade.
- Assessment of the adequacy of existing national and small area studies to respond to these financing data needs.
- Examination of the best methodological and dissemination approaches for decentralizing the financing data system so that state and local providers and policymakers can more effectively use the information and contribute to the base of financing knowledge.

More specifically, the following recommendations are suggested to improve our base of knowledge related to financing mental health services for children and adolescents.

1. Identify a small number of key topics in mental health services financing for children and adolescents and examine how multiple national data sources can be used to answer the questions.
2. Identify a few national surveys, such as the 1987 NMES and the 1988 CHS, and work with agency personnel responsible for the surveys to review the potential mental health service financing policies that could be examined.
3. Increase support for secondary data analysis of national "financing-related" surveys and

expand the cadre of researchers and policy-makers experienced in the use of national data. As one strategy, consider developing a program for training faculty to train students in the use of large data bases. Master's theses and doctoral dissertation programs, using selected data bases, could be incorporated into such programs, with support for faculty supervision, dissertations, and computer time.

4. Create an interagency collaborative strategy to use multiple national data bases for analysis of financing mental health services for children and adolescents.
5. Assess the strengths and weaknesses and options for building our longitudinal surveys—NLS and SIPP—to examine health needs (versus demand) and to expand the health insurance areas.
6. Develop and refine synthetic estimation techniques for using national and regional financing data in individual states.
7. Encourage new and continuous surveys to assess mental health benefit packages offered by public and private plans.
8. Consider a special supplement to the National Health Interview Survey on mental health, like the Child Health Supplement.
9. Collect new information on mental health services foregone because of insurance and cost limits.
10. Determine the catastrophic health insurance needs for families who have children with special mental health care needs.
11. Further promote the dissemination efforts of the National Center for Health Statistics by publicizing new and existing public

data user groups and by expanding the NCHS-sponsored workshops for those unfamiliar with federal data bases, those with public use tapes, and those with extensive expertise in specific surveys.

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WORKSHOP SUMMARY

Financing Mental Health Care for Children and Adolescents: A Gestaltist View of Fragmented Research and Services

Somewhat like the interpretation of a projective test, summarizing the papers in this volume involves assessing both their manifest and latent content. On the surface, the papers are a very interesting set of discussions that characterize the state of knowledge about the financing of mental health services for children. At another level, however, the papers present a simultaneously disturbing and hopeful analysis of the problems inherent in caring for children with mental health problems. The disturbing aspect is how fragmented and incomplete is our knowledge and how poorly developed is our system of care. Yet, while there is much that we need to do and much knowledge that we lack (see Saxe, Cross, and Silverman 1988), there is surprising consistency across the papers in the view of the nature of the problem and needed solutions.

The contributions to this volume are, to use the Gestalt metaphor, a "whole" that is greater than the sum of its parts. Individually, the papers reflect the fragmentation of the field—both the fragmented service delivery system (see, for example, Knitzer 1982) and fragmented research on services and financing (see, for example, Saxe et al. 1987). Together, however, the papers form a relatively coherent critique of the present system and provide at least the outlines of how to remedy the problems that characterize the present system of care. Each of the papers implicitly recognizes the central problem: that financing is "driving" treatment. The majority of the papers also suggest or imply a solution: that we need to develop a coordinated system of care.

To use the Gestalt metaphor in a slightly different way, the diagnosis of the financing system as assessed by the authors in this volume is that its components do not sum to a "whole." Whether the focus is directly on how services are being paid, or the focus is on problems of particular children, it is clear that we are paying more than we should for services that are less than are needed.

Even the individual research studies reported seem to provide less than what the authors regard as necessary. Rather than being the conclusion of the research chapters, many had "more research is needed" as the central focus.

In the discussion below, two strands that seemed to connect all of the papers—the emphasis on finance-driven treatment and the need for a coordinated system of care—are used to provide a summary of the papers. Although this emphasis probably does an injustice to some important issues raised by the papers, our goal is to create something larger than the component papers. In that sense, our task is not unlike the task faced by those who care deeply about children and are working to improve mental health services to children and adolescents.

Finance-Driven System

As a number of the papers point out explicitly, and virtually all of the contributions imply, dollars drive our mental health care system for children and adolescents. How and where funds are allocated heavily influences—and is, perhaps, the central influence on—the availability, type, and duration of children's mental health treatment. Rather than the needs of the child being paramount, requirements of the financing system appear to be the driving force. We are very far from achieving balance between the need to fund mental health services efficiently and the need to provide quality services.

The implications of a finance-driven, rather than a child-driven or clinically driven, system are dramatically illustrated in Julius Richmond's introductory chapter. Richmond documents the rapid escalation of health and mental health care costs, costs that have doubled as a percentage of the Gross National Product over the past 25 years. Controlling these costs has been chaotic, according to Richmond, and has led to a struggle

between the market and regulation. Until recently, the system operated on what Richmond calls a "deficit-model." It was assumed that increasing resources would solve any problem. Unfortunately, such an emphasis led us away from developing comprehensive services. This has fostered an entrepreneurial approach to health, a concern for the "bottom line" that has squeezed out poor children in need, and an economic "cannibalism" among agencies fighting for the same dollars.

Although, perhaps, the magnitude of the problem is currently more severe and is certainly more apparent, Mary Jane England's chapter suggests that the problems of the children's mental health system are long standing. We have had, for some time, a perverse system for financing mental health care for children and adolescents. Promising developments, some of which are nearly a century old (e.g., child guidance clinics), were initially funded by private sources and local communities. By the time such facilities began to reach their full potential (mostly after World War II), a variety of public health financing mechanisms were in place. But, by and large, public financing neglected children. Most importantly, the community mental health movement of the 1960s greatly expanded funding for adult treatment, but did so with little attention to children. In recent years, England notes that there have been increases in services for children, but these increases have not necessarily represented advances. For example, Medicare changes between 1980 and 1984 resulted in empty hospital beds, and this, in turn, encouraged hospitals to convert beds for use as adolescent inpatient care. Instead of improving care, however, adolescents who had been appropriately treated as outpatients began to be hospitalized.

The pervasive role of insurance coverage policy on the treatment provided to children is documented in Constance Horgan and Thomas McGuire's empirical analysis of private insurance coverage of psychiatric hospitalization of children. Horgan and McGuire found that limits on the number of days for which inpatient treatment was covered had a significant effect on the amount of

treatment provided. Their data seem to suggest that children and adolescents will be hospitalized for as long as the limit of their insurance coverage. In their comparison of coverage allowed by eight companies, significant differences appear between those that have or do not have a 45-day limit on inpatient hospitalization episodes. These data do not indicate the clinical implications of short versus long hospitalizations, although other reviews of the literature (e.g., Saxe et al. 1988, Weithorn 1988) suggest that many of these lengthy stays could be avoided if appropriate nonhospital placements were available.

While Horgan and McGuire suggest that treatments may expand more on the basis of available resources than demonstrated clinical need, Arnold Birenbaum and Dorothy Guyot's analysis shows the consequences when resources are not available for much needed comprehensive care. They found that availability of insurance for autistic children predicted access to regular sources of care and frequency of use of much needed services. The quality of life of autistic children and their families often depends on nonmedical services like respite and summer programs, but only a minority of families used these services, which are typically not covered by insurance.

Dollars can even affect the range of services provided in comprehensive care systems such as health maintenance organizations (HMOs). Maureen Shadle and Jon Christianson's literature review and analysis of survey data suggest that HMOs usually fail to provide adequate treatment for the chronically mentally ill, for patients with conduct disorders, and for patients with other diagnoses that are less tractable and therefore more expensive to treat.

Innovations in financing must also be examined for their consequences for mental health care. One of the most important of recent health care financing developments is the use of prospective payment systems. In its current form, diagnosis related groups (DRGs), it represents a funding mechanism that has potentially profound effects on the provision of mental health services. Both Marc Freiman's and Agnes Rupp's papers address

the use of DRGs and document their problematic application to children's use of mental health services. Rupp recommends greater inclusion of demographic and clinical data to refine children's psychiatric DRGs, while Freiman suggests that lack of predictive ability may not prevent children's DRGs from being utilized, just as they are for some adult beneficiaries despite their poor record.

Continuum of Care

What is, perhaps, most significant about this collection of papers is that many authors shared the same view of the solution to the fragmentation abetted by a finance-driven system. Although several of the authors use different terminology, they all point to a similar construct: integrated service delivery systems. Terms—including continuum of care, coordinated system of care, and comprehensive care—were used interchangeably to describe such a system. These terms refer to taking what Richmond in his paper calls "an integrated view of growth and development" that accounts for the interaction of biological, sociocultural, and psychological factors. A service system that deals with each factor in isolation is inimical to the nature of children's development. Taken together, the papers have identified an impressive roster of innovations in financing and service delivery that move toward an integrated system of care.

Richmond and England discuss the development of the federal Child and Adolescent Service System Program (CASSP), which aids state mental health systems to develop means of providing a coordinated system of care. Richmond discusses as well a range of services that are not thought of as mental health, but are central to sound emotional development for children at risk: prenatal and perinatal care, infant health services, early intervention services, good pediatric care, comprehensive preschool programs like Head Start, school-

based mental health services, and integrated service programs for adolescents.

In her paper on the effect of Medicaid coverage on access to mental health services, Harriet Fox discusses options such as home- and community-based waivers that, for target groups of children, allow funding of "in between" services such as partial hospitalization or case management, or inclusion of mental health services as an adjunct to the Early and Periodic Screening, Diagnosis and Treatment (EPDST) program.

John Butler discusses the limited but essential contribution of schools to financing of mental health services. The expectations engendered by the Education for All Handicapped Children Act, P.L. 94-142, have not been realized fully, but Butler points out that P.L. 99-457, designed to encourage states to create comprehensive systems of early intervention and preschool for handicapped children, may force schools to provide more services by identifying handicapped children earlier. Butler points to a multiagency network approach in Florida that increases the flexibility of different agencies working in conjunction to provide service funds from various sources. P.L. 99-457 may increase local cost sharing, as exemplified by the Florida model.

In her chapter, Deborah Franks recognizes that the family is an important source of economic contribution that must receive greater attention in an integrated system of care. In money, time, and lost opportunities, families inevitably bear much of the cost of dealing with a troubled child. Their contribution increases in a deinstitutionalized, community-based system of care, when an increased number of children live at home versus a residential placement. In a system of community care, society and families share responsibility, and family support is both necessary and, as research suggests, effective (see, for example, Seitz, Rosenbaum, and Apfel 1985).

Just as prevention is a necessary component of a community-based, integrated system of care, so must the economics of prevention inform policy on financing a mental health care system. Richard Frank's paper focuses on the economic aspects of

such risk factors as adolescent mothering, single parenting, divorce, and abuse and neglect, and of services such as prenatal and pediatric care, child care, and school-based prevention programs. He suggests how economic policy potentially could enhance prevention in these areas.

In another paper that implicitly examines the economic links between mental health and other services, Barbara Starfield and Kelly Kelleher examine how mental health treatment may influence children's use of medical services. They review evidence that suggests an offset effect of children's mental health treatment in use of medical services, but also highlights how troubled children often have a range of other medical problems and thus need coordination of a variety of services.

One of the strengths of the papers is that they assemble data where data have not previously existed. Margaret McManus, for example, suggests procedures for using national financing data bases to address questions about how children's mental health care is financed. She reviews available data bases, discusses tactics to increase information and disseminate it more widely, suggests examining the effects of insurance and cost limits, and recommends an interagency collaborative strategy to using data bases. It is clear that progress in financing mental health services to children, and developing a continuum of care, is in part dependent on knowing better what we are doing. Data are essential in this process.

Conclusions

The complexity of the problems faced in trying to improve mental health services to children is well documented by the present papers. What is perhaps most clear from this collection of papers is that the solutions, both to research and service financing questions, may be even more complex. To develop a continuum of

care that balances the availability of financial resources with the clinical needs of children will require the collaboration and interdependence of various professionals. Although the multidisciplinary make-up of the authors of this volume suggests that communication among these groups is possible, communication is only the first step.

As perhaps suggested by the Gestalt metaphor which introduced this summary, it seems that what is most important is to develop a framework within which the Gestalt can be altered. Developing a new environment within which children's mental health services can be financed and delivered probably demands that we make a different commitment to children than has been true in the past. Legislatively, it probably requires that we support some type of national mandate for children's health. Parallel to the Education for All Handicapped Children Act, P.L. 94-142, it would ensure that children had the right to access to the most appropriate care. Although it would not solve some of the fundamental problems of financing mental health care, it would provide the impetus for coordinating care and developing more cost-effective treatment systems.

One of the problems that such a mandate will not solve is the problem, identified by Richmond and others, of poverty in America. Many of the solutions to the mental health problems faced by children will be ineffective if children are poorly housed, poorly fed, and poorly cared for. Although those of us who are trying to develop better services for children cannot take responsibility for all of the problems of children, we cannot ignore these problems either. The potential benefits and rewards are too great.

References

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